
TANK PLATOON

JULY 2019

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Foreword

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Tank Platoon

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Preface

The ATP 3-20.15/ MCRP 3-10B.1 is a dual-designated Army and Marine Corps publication that provides principles, tactics, techniques, and procedures (TTP) for the employment of tank platoons. It also provides the framework and tactical employment principles for tank platoons of the Armor and Mechanized Infantry Company Teams and Combined Arms Battalions.

ATP 3-20.15/MCRP 3-10B.1 also provides doctrinal guidance for commanders, staff, and leaders who are responsible for planning, preparing, executing, and assessing operations of tank platoons. This ATP/MCRP serves as an authoritative reference for personnel developing doctrine (fundamental principles and TTP), material and force structure, institutional and unit training, and tank platoon standard operating procedures (SOP).

The doctrinal principles and procedures contained in this ATP/MCRP are intended to be used as a guide and not to be considered prescriptive. ATP 3-20.15/MCRP 3-10B.1 outlines the framework in which tank platoons operate, either by themselves or together as part of the combined arms company team. ATP 3-20.15/MCRP 3-10B.1 also includes discussions of doctrine applicable to all tank platoons.

This publication applies to the Active Army, the United States Army National Guard (ARNG)/Army National Guard of the United States (ARNGUS), the United States Army Reserve (USAR), and the United States Marine Corps (USMC). All references to Service members include Army and Marine Corps personnel.

ATP 3-20.15/MCRP 3-10B.1 uses joint terms where applicable. Selected joint, Army, and *Marine Corps* terms, and definitions appear in the glossary and the text. In doctrinal publications, the normal convention for identifying terms is through the use of italics. Since this is a dual-designated Army and *Marine Corps* publication, the following protocol is used to distinguish proponentcy (authority) for information and terms:

- Terms and phrasing in italics—Marine Corps.
- Terms and definitions in bold—Terms for which ATP 3-20.15/MCRP 3-10B.1 is the proponent publication.

- Terms in bold and definitions in plain text—Joint terms and Army terms with proponent publication other than ATP 3-20.15/MCRP 3-10B.1, with the proponent publication in parentheses.

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Introduction

ATP 3-20.15/MCRP 3-10B.1 encompasses techniques for tank platoons of armored brigade combat teams (ABCTs). It replaces ATP 3-20.15, published in December 2012. ATP 3-20.15/MCRP 3-10B.1 provides doctrinal guidance; describes relationships in the platoon; defines organizational roles and functions, capabilities, limitations; and lay out the responsibilities for platoons during unified land operations. The tank platoon is a unified team; all tanks crews work together to achieve mission success. A single tank can be vulnerable in the face of diverse battlefield hazards, such as enemy forces or unfavorable terrain and situations. These vulnerabilities are significantly reduced when tanks are employed as platoons. The tank platoon requires bold, aggressive, resourceful, and adaptive leaders—leaders of character, competence and commitment—who are willing to accept prudent risks to accomplish the mission. This publication addresses the significant changes in Army doctrinal terminology, constructs and proven tactics, techniques, and procedures. The following paragraphs provide a summary by chapter:

Chapter 1 – Organization:

- Addresses the role and organizational characteristics of the tank platoon to conduct offensive, defensive, and stability tasks.
- Provides information on the Armor and Infantry companies.

Chapter 2 – Troop Leading Procedures:

- Discusses the planning considerations that a platoon leader/*platoon commander* executes in conjunction with the next higher echelon to ensure proper alignment of task and purpose.
- Describes the steps of troop leading procedures (TLP) and how they are the framework for planning and preparing of a mission.
- Addresses rehearsals that are conducted to prepare the platoon for an upcoming operation or event.

Chapter 3 – Offense:

- Addresses primary purpose of the offense—to decisively defeat, destroy, or neutralize the enemy force, or to seize key terrain.
- Discusses offensive actions to deceive or divert the enemy, deprive them of resources or decisive terrain, collect information, or fix the enemy in position.
- Addresses the following keys to offensive tasks—identify the enemy’s decisive point; choose a form of maneuver avoiding the enemy’s strength while exploiting the enemy’s weakness; and ensure an operation massing overwhelming combat power.
- Discusses basics of the offense, planning considerations, and direct and indirect fire planning, which apply to all offensive actions.
- Concludes with planning considerations in transitioning to other operations.

Chapter 4 – Defense:

- Addresses primary purpose of the defense—to repel, to defeat, or to destroy an enemy attack and to gain the initiative for the offense.
- Discusses the basics, characteristics, and planning considerations and direct and indirect fire planning of defensive missions.
- Describes the three defensive tasks—area defense, mobile defense, and retrograde operations.
- Discusses three basic forms of the defense: defense of a linear obstacle, perimeter defense, or a reverse-slope defense.
- Addresses common defensive control measures.
- Concludes with a discussion of planning considerations in transitioning to other operations.

Chapter 5 – Stability:

- Discusses stability components of operations encompassing various military missions, tasks, and activities conducted outside the United States in coordination with other instruments of national power.
- Addresses brigade combat team support to stability tasks, essential offensive and defensive tasks, and planning considerations.
- Provides discussion on transitioning from stability tasks to operations focused on offensive or defensive tasks.

Chapter 6 – Sustainment/*Logistics*:

- Addresses the sustainment challenges to ensure continuous operations during combat.
- Discusses sustainment of the tank platoon to ensure maneuver and conduct of combat operation.
- Addresses anticipation of future sustainment needs critical to operations and maintaining the momentum.
- Focuses platoon sustainment operations, includes unit responsibilities, company trains operations, and functions of sustainment.

Chapter 7 – Enabling Task and Activities:

- Describes the different types of movements, administrative and tactical.
- Discusses route selection, navigational aids, and routes types.
- Addresses reconnaissance and security tasks that the tank platoon may perform.
- Provides techniques for conducting linkup, relief in place, passage of lines, and breaching.

Chapter 8 – Augmenting Combat Power:

- Discusses fires as it applies to the tank platoon.
- Addresses air ground operations along with unmanned aerial vehicles.
- Describes passive and active air defense measures.

Four appendixes complement the body of this publication addressing procedures performed at platoon- and section-level. They are as follows:

- Appendix A describes direct fire planning and control.

- Appendix B describes chemical, biological, radiological, and nuclear (CBRN) operations.
- Appendix C describes Infantry organizations.
- Appendix D discusses the tank platoon in the Cavalry squadron.

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Chapter 1

Organization

The fundamental mission of the tank platoon is to close with and destroy the enemy. The platoon's ability to move, shoot, and communicate while providing armored protection by the Abrams tank is a decisive factor on the modern battlefield. The tank platoon is capable of conducting offensive, defensive, and stability tasks to support unified land operations/*Marine-Air Ground Task Force ground operations*.

It also provides discussion on the duties and responsibilities of platoon members.

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SECTION I – ROLE OF THE TANK PLATOON

1-1. The platoon's ability to accomplish the mission is dependent upon being properly trained to conduct decisive actions, receiving sound leadership, and the motivation of its crews. Crews must be aggressive, and their tactics must reflect the tempo and intensity of maneuver warfare. The tank platoon provides capabilities that do not exist elsewhere in the U.S. Army, and the proper application of those capabilities ensures that it is a devastating force on the modern battlefield.

TANK PLATOON

1-2. A tank platoon includes four main battle tanks organized into two sections, with two tanks in each section (see figure 1-1). The platoon leader/*platoon commander*, who is the tank commander of the vehicle designated as Tank 1, and the platoon leader's/*platoon commander's* wingman, (who should be the most competent tank commander in the platoon), is the tank commander of Tank 2 is the A section. B section consists of the platoon sergeant, who is the tank commander of Tank 4, and Tank 3 is the platoon sergeant's wingman.

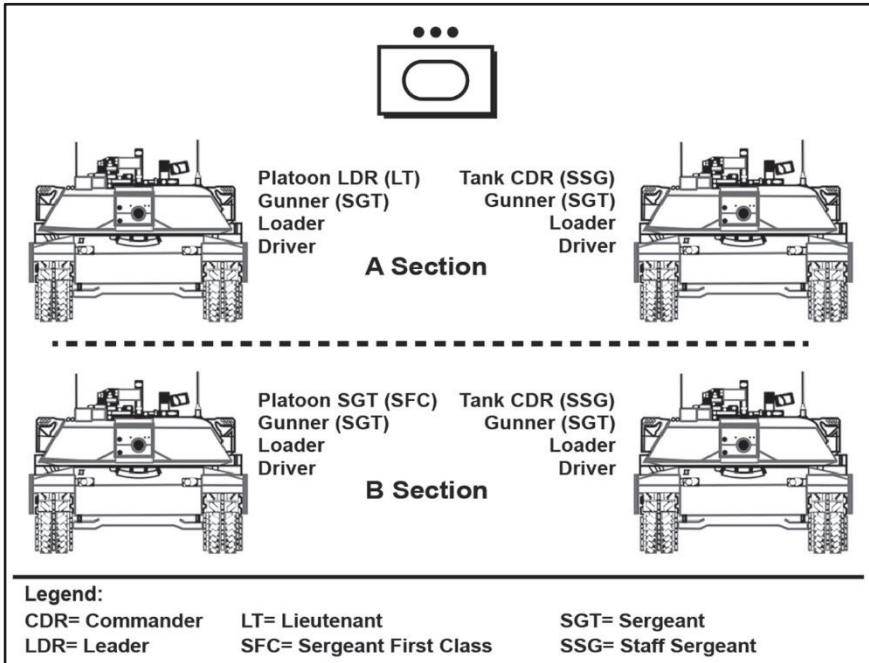


Figure 1-1. Tank platoon

1-3. The wingman concept facilitates control of the platoon under battlefield conditions. The concept requires that individual tanks orient off the tank to its left or right side. In the tank platoon, Tank 2 orients off the platoon leader's/*platoon commander's* tank, while Tank 3 orients off the platoon sergeant's tank. The platoon sergeant orients off the platoon leader's/*platoon commander's* tank.

CAPABILITIES AND LIMITATIONS

1-4. Leaders must have a clear understanding of the capabilities and limitations of their equipment to ensure mission accomplishment. The tank platoon has the following capabilities:

- Conducts operations requiring firepower, mobility, armor protection, and shock effect.

- Sophisticated communications, digital equipment, global positioning systems (GPS), and inertial positioning and navigation systems.
- Onboard optics and sighting systems enable crews to acquire enemy either day or night.
- Each tank can carry up to 42 rounds of ready and semi-ready 120-millimeter (mm) main gun ammunition, 900 rounds of .50 caliber ammunition and up to 10,800 rounds of 7.62-mm.
- It can destroy enemy vehicles during the day, night, or during periods of limited visibility at extended ranges, while on the move.
- Machine guns allow crews to engage, suppress, neutralize, and destroy enemy positions, personnel, and lightly armored targets.
- Assaults enemy positions.
- Defends by repelling enemy attacks with fires.
- Secures terrain.
- Conducts mounted patrols.
- Provides support, as armor protection and fires, to Infantry and engineer elements in restricted terrain or during an assault.
- Suppresses enemy positions with machine gun or main gun fire.
- Operates in a chemical, biological, radiological, and nuclear (CBRN) environment.
- Reduces mine and wire obstacles when equipped with mine rollers and mine plows.
- Fords water obstacles up to four feet in depth.

Note. Marine Corps M1A1 main battle tanks have the ability to ford water obstacles up to 48 inches without modification and up to 96 inches with fording kit installed.

1-5. The tank platoon has the following limitations:

- Requires proficient operators, extensive maintenance, and skilled mechanics, as well as daily resupply of large quantities of petroleum, oils, and lubricant products.
- The ability to maneuver, move, and fire is more limited when operating in built-up areas, dense woods or other restricted terrain.
- If operating with closed hatches, the dead space immediately around the vehicle is increased. Reduced visibility leaves them vulnerable to dismounted Infantry attacks and improvised explosive devices.
- Digital equipment, GPS, and position navigation systems (known as POSNAV) can become a limitation when operating against peer threats in contested environments.
- Reduced visibility may restrict tanks to trails, roads, or streets. This severely limits maneuverability and observation, and increases their vulnerability to enemy antiarmor weapons.

- The 120-mm main gun can depress only to minus 10 degrees and elevate only to plus 20 degrees, which creates considerable dead space in an urban environment.
- Existing or reinforcing obstacles can restrict or stop movement.

SECTION II – DUTIES AND RESPONSIBILITIES

1-6. Tank crews are a tightly integrated team, each member has primary duties; however, success depends on them working together as a crew. They must work together to maintain and service their tank and equipment and function as one in combat. Tank crew cohesion is vital to the successfulness in garrison and the survivability in combat. Cross-training must remain a priority in the unfortunate event an Armor crewman is incapacitated.

PLATOON LEADER/*PLATOON COMMANDER*

1-7. The platoon leader/*platoon commander* bears the responsibility for all that the platoon does or fails to do. The platoon leader/*platoon commander* is responsible for the tactical employment, collective training, administration, personnel management, and logistics of the platoon. The platoon leader/*platoon commander* must know each crewmember's capabilities, and how to employ the platoon and its equipment. The platoon leader/*platoon commander* must—

- Be responsible to the commander for the discipline and training of the platoon, the maintenance of its equipment, and its success in combat.
- Operate within the commander's intent when unable to communicate with higher headquarters (HQ) and update the commander on the actions of the platoon at the earliest opportunity.
- Be responsible for the accomplishment of all missions per the commander's intent.
- Plan operations with the help of the platoon sergeant, tank commanders, and other key personnel.
- Stay abreast of the situation and go where needed to supervise, issue fragmentary orders (FRAGORDs), and accomplish the mission.
- Request from the company commander any support needed to help the platoon perform its mission.
- Develops platoon direct fire plan or sector sketch.
- Assist the platoon sergeant in planning and coordination of sustainment for the platoon.
- Receive on-hand status reports from the platoon sergeant, tank commanders, and gunners during planning.
- Review platoon requirements based on the tactical plan.
- Develop the fire support plan with the platoon sergeant and tank commanders.
- Coordinate the obstacle plan.

- Analyze tactical situations, disseminate, and filter information, and employ the full capabilities of the platoon's equipment (digital or analog) to accomplish the mission.
- Analyze the information environment within the platoon's area of operations (AO) that support the commander's intent and concept of operations.
- Ensure situation reports are accurately prepared and sent forward to the company team commander.
- Analyze and disseminates pertinent tactical friendly and enemy updates to subordinates.
- Employ all available assets to designate targets for the direct and indirect fire weapons and for situational updates.
- Maintain situational awareness of friendly position updates, overlay updates, and digital reports.
- Be a subject matter expert in the tactical employment of the platoon, both independently or as part of a company team.
- Understand TLP and develop the ability to apply them quickly and efficiently on the battlefield.
- Know the capabilities and limitations of the platoon's personnel and equipment.
- Ensures the platoon has Isolated Soldier Guidance and that it is rehearsed.
- Be well versed in enemy organizations, doctrine, and equipment.
- Be prepared to assume duties of the company commander per the succession of command.
- Serves as a tank commander.
- Be flexible and capable of using sound judgment to make correct decisions quickly, and at the right times, based on the commander's intent and the tactical situation.
- Know and understand the mission and the commander's intent, during decentralized operations.
- Assist other crewmembers as necessary.

PLATOON SERGEANT

1-8. The platoon sergeant is second in command of the platoon and the most experienced enlisted member in the platoon. In the absence of the platoon leader/*platoon commander*, the platoon sergeant performs all duties of the platoon leader/*platoon commander*. The platoon sergeant—

- Assists and advises the platoon leader/*platoon commander*.
- Mentors crewmen, other noncommissioned officers, and the platoon leader/*platoon commander* on tactical and technical employment of the platoon's assigned equipment.
- Supervises the platoon's administration, logistics, and maintenance.

- Responsible for the medical and administrative readiness and the deployable status of the platoon at all times.
- Responsible for the professional development and career management of the noncommissioned officers in the platoon.
- Supervises individual and crew training.
- Advises the platoon leader/*platoon commander* on appointments, promotions and reductions, assignments, and discipline of the noncommissioned officers and enlisted members of the platoon.
- Updates the platoon leader/*platoon commander* on appropriate reports, and forwards any reports needed by company HQ.
- Takes charge of task organized elements in the platoon during tactical operations, including quartering parties and support elements.
- Serves as a tank commander.
- Monitors the morale, discipline, and health of platoon members.
- Ensures the platoon maintains all equipment.
- Coordinates and supervises company-directed platoon resupply operations.
- Collects, prepares, and forwards logistic status updates and requests to the company executive officer (XO) or first sergeant (1SG)/*tank leader*.
- Ensures ammunition and supplies are properly and evenly distributed after the platoon consolidates on the objective and while the platoon reorganizes.
- Ensures support supplies are present.
- Directs the platoon's casualty evacuation plan.
- Maintains platoon strength information, consolidates, and forwards the platoon's casualty reports, and receives and orients replacements.
- Monitors the common operational picture to maintain awareness of the platoon's positions relative to the company formation.
- Maintains accountability to the platoon leader/*platoon commander* for the training, discipline, and welfare of the platoon members.
- Coordinates the platoon's sustainment requirements and handles the personnel needs of each crewmember.
- Performs actions on the battlefield which complement those of the platoon leader/*platoon commander*.
- Assists other crewmembers as necessary.

TANK COMMANDER

1-9. The tank commander is responsible to the platoon leader/*platoon commander* and platoon sergeant for training the tank on crew and individual tasks that support the platoon's mission. The tank commander has the following responsibilities:

- Trains and supervises the tank on the maintenance and accountability of assigned equipment, and the tactical employment of the tank.
- Responsible for fostering crew cohesion.
- Responsible for the medical and administrative readiness of the tank crew.

- Briefs the crew, directs the movement of the tank, submits all reports, and supervises initial first-aid treatment and evacuation of wounded crewmen.
- Understands the equipment and is an expert at using the tank's weapon systems, requesting indirect fires, and executing land navigation using both digital systems and more traditional methods, such as terrain association.
- Develops range card for tank weapons.
- Controls vehicle direct fires.
- Ensures the welfare of the crew.
- Issues fire commands.
- Responsible for the operation of the .50 caliber machine gun.
- Lays the gun for direction, if necessary.
- Know and understand the company mission and company commander's intent. These requirements demand that the tank commander maintain situational awareness. The tank commander does this by using all available optics for observation, monitoring radio transmissions, and digital display.
- Responsible for ensuring equipment is stowed and secured properly per unit load plans or standard operating procedures (SOPs).
- Assists other crewmembers as necessary.

GUNNER

1-10. The gunner has the following duties:

- Searches for targets, aims, and fires both the main gun and the coaxial machine gun.
- Responsible to the tank commander for the immediate supervision of and assisting with the overall maintenance of the entire vehicle and accountability of all equipment.
- Responsible for the manual inputs into the fire control system through the gunners control digital panel/*Computer Control Panel*.
- Assists other crew-members as needed.
- Maintains the tank's communications and internal control systems.

LOADER

1-11. The loader has the following duties:

- Stows and cares for ammunition, loads the main gun and the coaxial machine gun ready box.
- Aims and fires the loader's machine gun.
- Ensures that communication equipment is inspected and is operating properly.
- Searches for targets, maintains rear security, and acts as air guard against enemy air attack or antitank (AT) guided missile guard, before engagement actions are initiated.

- Assists the tank commander as needed by providing directions to the driver, so the tank maintains its position in formation.
- Responsible for the turret maintenance of the tank.
- Assists other crewmembers as necessary.
- Dismounts tank to help in the positioning of tank or ground guiding.

1-12. Because the loader is ideally positioned to observe around the tank and to monitor the tank's digital displays, platoon leaders/*platoon commanders* and tank commanders should give strong consideration to assigning their second most experienced crewman as the loader.

DRIVER

1-13. The driver has the following duties:

- Moves, positions, and stops the tank.
- While driving, searches for covered and concealed routes and for covered positions to which the driver can move if the tank is engaged.
- Maintains the tank's position in formation and watches for visual signals.
- Monitors the steer-to indicator, if the tank is equipped, and selects the best tactical route.
- Assists the gunner and tank commander by scanning for targets and sensing fired rounds during engagements.
- Responsible for the maintenance of the tank and is assisted by other crewmembers.
- Responsible for monitoring the Drivers Display Panel/*Drivers Master Panel and Driver's Instrument Panel* and notifying the tank commander of any cautions, warnings, or mechanical issues that arise. Keeps track of fuel levels and quantity of fluids added.
- Assists other crewmembers as needed.

SECTION III – COMPANY ORGANIZATIONS

1-14. The tank platoon is organic to Armor companies of a combined arms battalion. The platoon may be attached to a number of organizations, commonly a mechanized Infantry company, to create company teams. It may also be placed under the control of an Infantry organization. The exact amount of control the gaining unit would have is determined by the command relationship established by its higher HQ.

ARMOR COMPANY

1-15. The Armor company is organized, equipped, and trained to fight pure or as a task organized company team. (Refer to ATP 3-90.1 and *MCTP 3-10B* for more information.) The Armor company includes a HQ and three tank platoons. The company HQ is equipped with two tanks, an M113A2/A3 armored personnel carrier, and wheeled vehicles for mission command/*command and control* and sustainment (see figure 1-2).

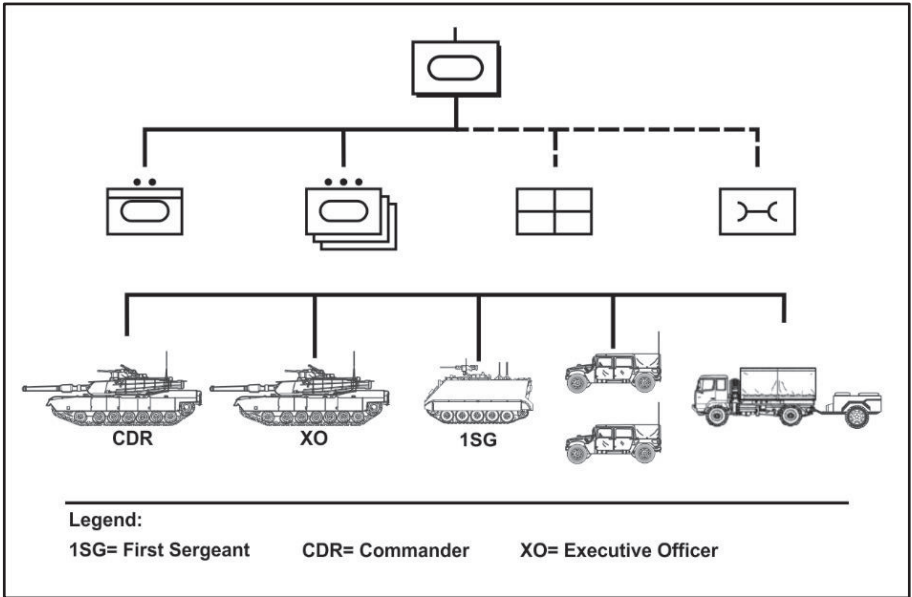


Figure 1-2. Armor company

MECHANIZED INFANTRY COMPANY

1-16. The mechanized Infantry company is organized, equipped, and trained to fight with organic assets or as a task-organized company team. The mechanized Infantry company includes a HQ and three Bradley Fighting Vehicle platoons. (Refer to ATP 3-90.1 for more information.) Figure 1-3 illustrates the organization of a mechanized Infantry company.

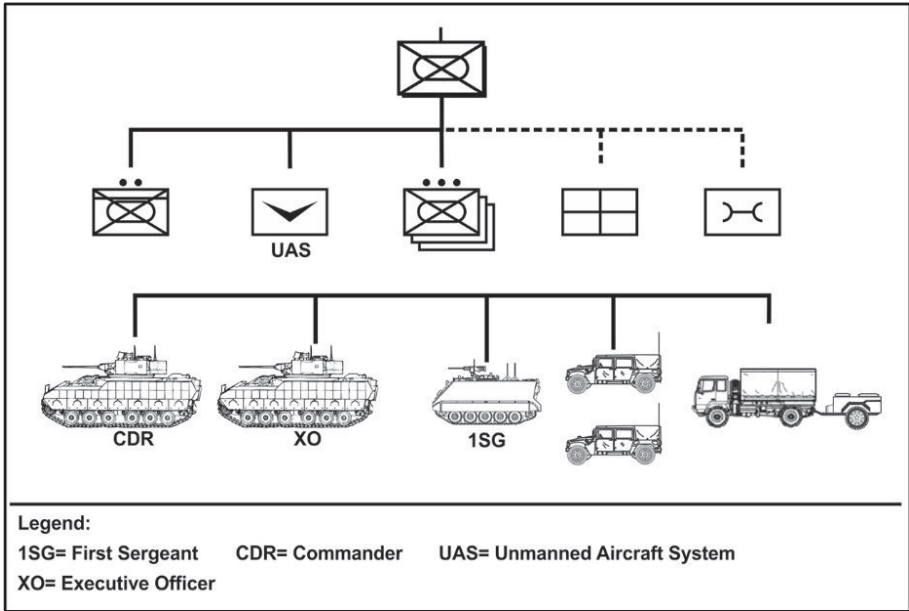


Figure 1-3. Mechanized Infantry company

INFANTRY RIFLE COMPANY

1-17. The Infantry rifle company is organized with three Infantry rifle platoons each with a weapons squad that can deploy rapidly and be sustained by a support structure (see figure 1-4). The platoon's composition and training uniquely equip it to conduct missions against conventional and hybrid threats in all types of terrain and climate conditions. In addition to the Infantry rifle platoon's primary warfighting mission, it performs platoon-level tasks to support stability and defense support of civil authorities' tasks, semi-independently or as an integral part of a larger force. (Refer to ATP 3-21.10 for more information).

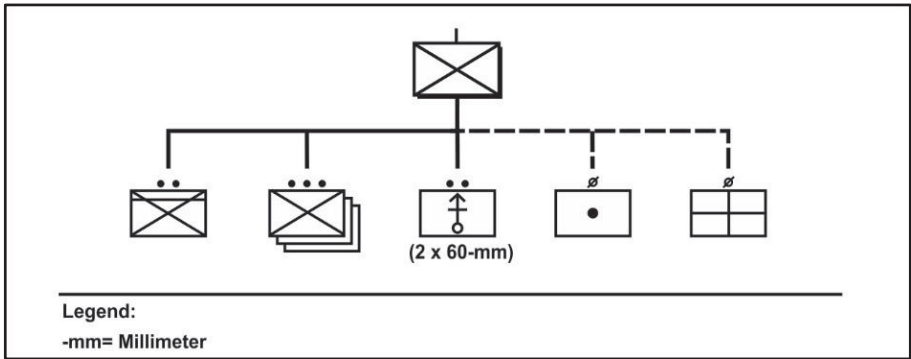


Figure 1-4. Infantry rifle company

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Chapter 2

Troop Leading Procedures

The platoon leader/*platoon commander* is responsible for everything the platoon does or fails to do. With the platoon sergeant, the platoon leader/*platoon commander* uses a variety of techniques to plan and prepare a platoon's mission. The planning process is often more important than the final plan itself, as it provides platoon leaders/*platoon commanders* with a greater understanding of the enemy, environment, and assigned task, increasing their tactical flexibility when the situation unexpectedly changes or when opportunities arise. TLP provide platoon leaders/*platoon commanders* a framework for planning and preparing for missions. Smaller units, company and below, lack formal staffs and use TLP to plan and prepare for operations. At the platoon-level, this places primary responsibility for planning on the platoon leader/*platoon commander*.

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SECTION I – PLANNING CONSIDERATIONS

2-1. A tank platoon predominantly operates as part of a larger organization, whether it be a company team, battalion/squadron, or higher. Therefore, the planning the platoon leader/*platoon commander* executes is in conjunction with the next higher echelon to ensure proper alignment of task and purpose. Failure to do so results in the wasted expense of an already limited resource—time.

2-2. Platoon leaders/*platoon commanders* can follow, though to a lesser degree, the same sequence their company or battalion/squadron commander does when executing the operations process: planning, preparation, execution, and assessment.

PLANNING

2-3. **Planning** is the art and science of understanding a situation, envisioning a desired future, and laying out effective ways of bringing that future about (ADP 5-0). A platoon leader/*platoon commander* receives a task and purpose from the company commander as a warning order (WARNORD) or operation order (OPORD) and begins the planning process.

2-4. Planning is an ongoing process and continues as necessary during preparation and execution. Parallel planning occurs when the platoon leader/*platoon commander* and company commander plan for the same mission at about the same time.

Note. The Army and Marine Corps use TLP, but they have different numbers of steps and slightly different names (see figure 2-1). The first three steps of Army TLP are captured in the first step of the Marine Corps TLP. “Begin planning.” (Refer to MCWP 5-10 for more information.)

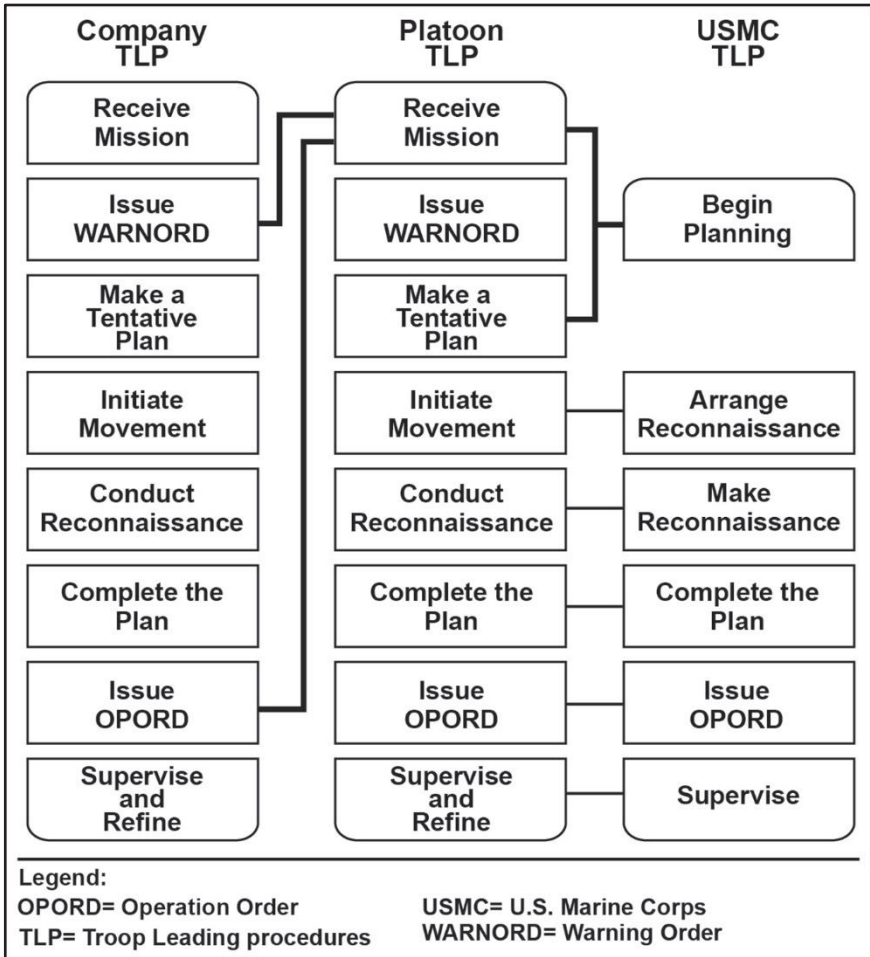


Figure 2-1. Parallel planning

2-5. At the platoon-level, planning focuses on fully developing the platoon’s role in the company commander’s directed course of action (COA), and rehearsing for likely contingencies that may cause the COA to develop in unexpected ways.

PREPARATION

2-6. Preparation includes activities performed by the tank platoon to improve its ability to execute the assigned task. Preparation includes, but is not limited to plan refinement, rehearsals (see section III for more information), coordination, checks and inspections, and movement.

2-7. Detailed and customized platoon SOPs consider the specific personnel and equipment in the tank platoon. When consistently executed and continually updated after each mission, the SOP can increase the platoon leader's/*platoon commander's* time available to plan and prepare for a particular assigned task. The most effective SOPs are ones developed with input from all leaders in the tank platoon.

EXECUTION

2-8. **Execution** is putting a plan into action by applying combat power to accomplish the mission (ADP 5-0). The platoon leader/platoon commander uses situational understanding to assess progress and make execution and adjustment decisions during the process.

ASSESSMENT

2-9. Assessment refers to the continuous monitoring and evaluation of the current situation, particularly the enemy, along with the progress of the assigned task(s). Assessment entails these tasks:

- Continuously assessing the enemy's reactions and vulnerabilities which may lead to windows of opportunity to exercise disciplined initiative.
- Continuously monitoring the situation and progress of the operation towards the company commander's desired end state.

SECTION II – TROOP LEADING PROCEDURES

2-10. The platoon leader/*platoon commander* uses TLP to solve tactical problems and uses the platoon sergeant and tank commanders to help with the process. The type, amount, and timeliness of information passed from higher to lower directly impacts the platoon leader's/*platoon commander's* TLP. TLP includes eight steps:

- Receive the mission/*Begin planning*.
- Issue the WARNORD.
- Make a tentative plan.
- Initiate movement/*Arrange reconnaissance*.
- Conduct reconnaissance/*Make reconnaissance*.
- Complete the plan.
- Issue the OPORD.
- Supervise and refine/*Supervise*.

Note. Chapter 10 in FM 6-0 contains a more in-depth discussion of each step of TLP.

EXECUTING TROOP LEADING PROCEDURES

2-11. TLP provide a framework for planning and preparing for a mission, beginning when the platoon leader/*platoon commander* receives the first indication of an upcoming mission, and continues throughout the operations process. As each subsequent order arrives, they modify the assessments, update tentative plans, and continue to supervise and assess preparations.

2-12. Normally, the first three steps (receive the mission, issue a WARNORD, and make a tentative plan) of TLP occur in order. However, the sequence of subsequent steps is based on the situation. Initiate movement and conduct reconnaissance may occur several times. The last step, supervise and refine, occurs throughout.

2-13. Subordinates require sufficient information to plan and prepare for their mission. In other cases, TLP start before receiving a company WARNORD based on existing plans and orders and on the subordinate leader's understanding of the situation.

STEP 1 – RECEIVE THE MISSION

2-14. The platoon leader/*platoon commander* receives the platoon's mission through a written or verbal WARNORD, OPORD, or FRAGORD, assesses the time available to accomplish the mission, and conducts a cursory analysis of the assigned task(s) using mission, enemy, terrain and weather, troops and support available, time available, and civil considerations (METT-TC). A more detailed METT-TC analysis comes after issue of the platoon WARNORD (step 2).

2-15. In addition to receiving (or deducing) the mission during this step, platoon leaders/*platoon commanders* also—

- Determine the entire time available to plan, prepare, and execute the mission.
- Determine the “one-thirds, two-thirds” timeline for leader planning and subordinate preparation, respectively (see paragraph 2-24 on page 2-9).
- Prepare an initial planning timeline.

STEP 2 – ISSUE THE WARNING ORDER

2-16. The platoon WARNORD is a preliminary notice of an order or action to follow, issued as close to receipt of the company WARNORD as possible. Less detailed than a complete OPORD, a WARNORD aids in parallel planning. After platoon leaders/*platoon commanders* receive the new or updated mission and assess the time available for planning, preparing, and executing the mission, they immediately issue a WARNORD to the platoon.

2-17. In the initial platoon WARNORD, the platoon leader/*platoon commander* includes the same elements given in the company commander's initial WARNORD, but platoon focused. If practical, platoon leaders/*platoon commanders* brief subordinate leaders face-to-face using a rough terrain model, sketch, or map (see figure 2-2 for an example of a WARNORD format).

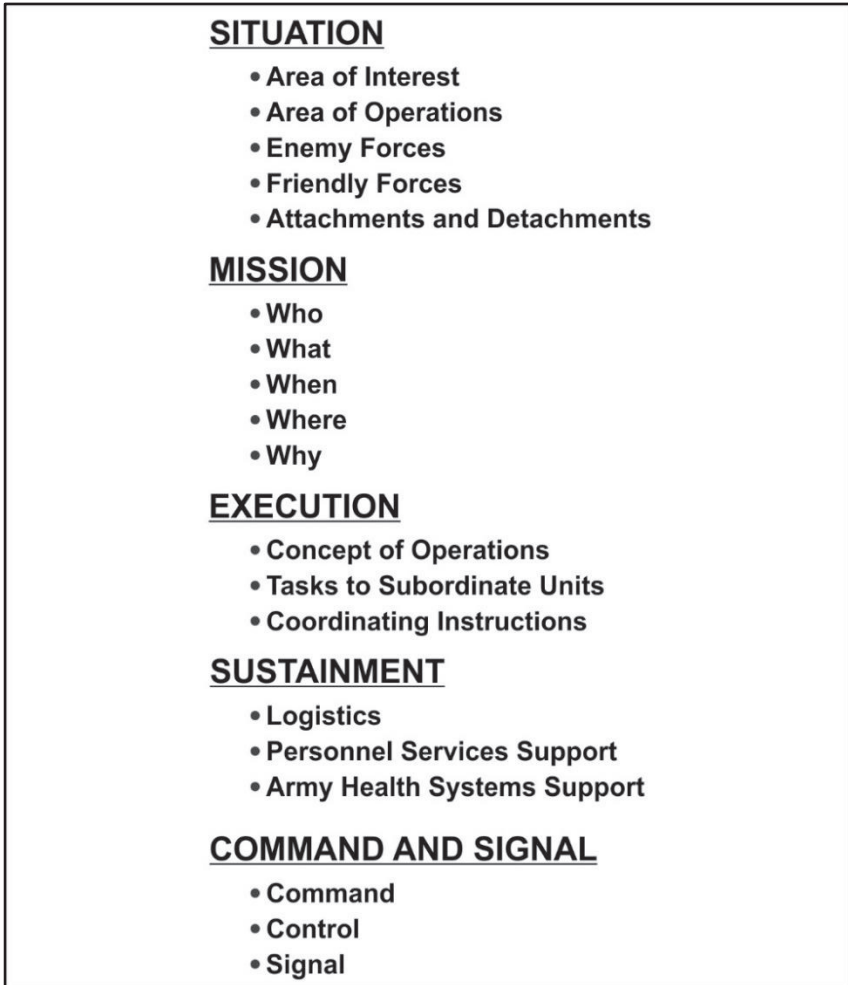


Figure 2-2. Example warning order format

2-18. The WARNORD has no specified format, though it may follow the five-paragraph OPORD format and include the following items:

- Enemy situation as currently known.
- Company mission or nature of the operation.
- Commander's intent (if available).

- Initial operational timeline.
- Platoon mission (may modify after step 3).
- Updated graphics (analog and digital).
- Reconnaissance to initiate, if any.
- Movement to initiate, if any.
- Earliest time of movement.
- Planning and preparation instructions (to include planning timeline).
- Information requirements.
- Commander's critical information requirements.
- Changes to task organization, if any.
- Use of specialized equipment, if any.
- Attachment of enablers, if any.
- Recommended ammunition loadout.
- Key events to rehearse and timeline to rehearse those events.
- Readiness condition (known as REDCON) and vehicle preparation schedule.
- Personal protective equipment modifications.
- Time and place for issuing the OPORD.

2-19. An essential element of the WARNORD is the initial planning timeline, including instructions or information that will help subordinates prepare for the upcoming mission.

2-20. Issuing the initial WARNORD as quickly as possible enables subordinates to maximize their own planning and preparation time (parallel planning) while the platoon leader/*platoon commander* begins to develop the OPORD. Upon receipt of more information, the platoon leader/*platoon commander* issues updated WARNORDs if time is available, giving subordinates as much information as is available at the time. Otherwise, the platoon leader/*platoon commander* will wait to give the information until the OPORD brief to the platoon.

Note. Figure 2-3 on page 2-8 is a concept sketch example of what a platoon leader/*platoon commander* may receive from their company commander. It shows the company commander's task and purpose along with the task and purpose for each platoon. Each platoon leader/*platoon commander* will use a concept sketch to make a tentative plan.

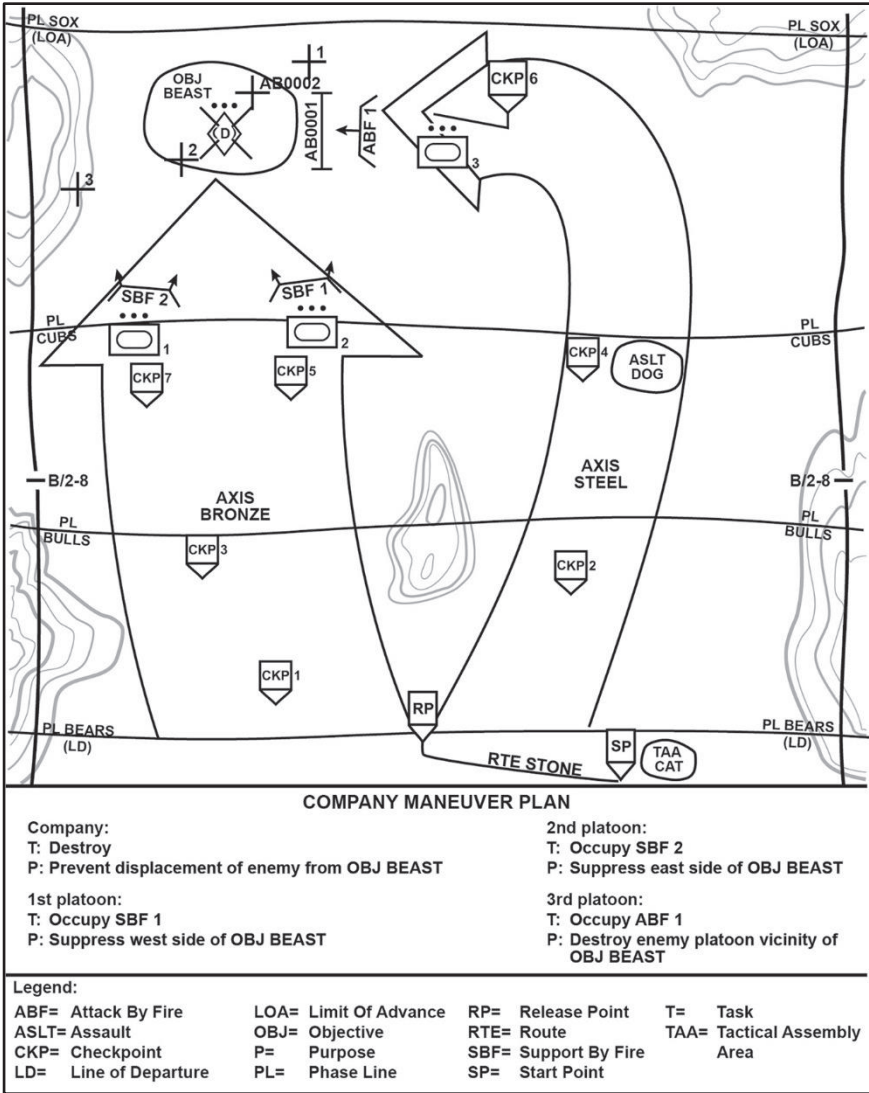


Figure 2-3. Example of company concept sketch

STEP 3 – MAKE A TENTATIVE PLAN

2-21. Platoon leaders/*platoon commanders* begin to develop a tentative plan after issuing the platoon WARNORD; they need not wait for a complete company OPORD before starting to develop a tentative plan.

MISSION ANALYSIS

2-22. Mission analysis helps answer the following four questions for the platoon leader/*platoon commander*:

- What is the current situation?
- What is my mission?
- How can we best accomplish the mission?
- What are the possible risks?

2-23. The platoon leader/*platoon commander* begins mission analysis immediately upon receipt of the mission from the company commander. During mission analysis, the platoon leader/*platoon commander*—

- Restates the given mission.
- Conducts an initial risk assessment.

2-24. Though mission analysis is an ongoing process, the platoon leader/*platoon commander* adheres to the “one-third/two-thirds” technique to give subordinates sufficient time to prepare at their level. One-third of the time available remains set aside for the platoon leader/*platoon commander* to prepare and issue an order, while the remaining two-thirds of the time is for tank commanders to disseminate the order to their crews and prepare for the mission.

2-25. The platoon leader/*platoon commander* conducts their own more in-depth mission analysis by evaluating the mission variables: METT-TC. Platoon leaders/*platoon commanders* convey to their subordinates deductions from these variables and the effect they will have on the platoon’s mission. A thorough mission analysis helps the platoon leader/*platoon commander* in recognizing and capitalizing on opportunities.

METT-TC

2-26. Mission variables describe characteristics of the AO and their impacts to a mission. The mission variables are:

- Mission.
- Enemy.
- Terrain.
- Troops and support available.
- Time available.
- Civil considerations.

2-27. Analyzing METT-TC is a continuous process. During execution, continuous analyses of the mission variables facilitates the issuing of well-developed FRAGORDs. Platoon leaders/*platoon commanders* assess if any new information presented during the planning process changes their mission and if so, decide how to adjust the plan to meet these new situations.

2-28. As METT-TC analysis does not need to occur in any particular order, how and when platoon leaders/*platoon commanders* analyze the variables depends on when they receive information as well as on their experience and preferences. One technique is to parallel the TLP based on the products received from their company.

Analysis of Mission

2-29. The platoon leaders/*platoon commanders* look to answer, for themselves, the question, “What have I been told to do, and why?”

2-30. Platoon leaders/*platoon commanders* must understand the mission, intent, and operational concept one and two levels higher. Doing so makes it possible to exercise disciplined initiative and act within limited windows of opportunity.

2-31. Platoon leaders/*platoon commanders* use the following to gain this understanding—

- Battalion/squadron (two levels up) mission, intent, and concept.
- Company (one level up) mission, intent, and concept.
- Unit’s purpose.
- Constraints.
- Specified, implied, and essential tasks.
- Restated mission.

Battalion/Squadron (Two Levels Up) Mission, Intent, and Concept

2-32. Regardless of echelon, leaders understand the concept of the operation two levels up, identifying the tasks and purposes, and how their immediate higher HQ contributes to the operation. At the platoon-level, this is the battalion’s/squadron’s mission, intent, and concept. This information is found in paragraph three of the company OPORD, or in paragraphs two and three in the battalion/squadron OPORD.

Company (One Level Up) Mission, Intent, and Concept

2-33. Leaders understand their immediate HQ concept of the operation, identifying their HQ’s task and purpose as well as their own contributions to the mission. At the platoon-level, this is the company commander’s mission, intent, and concept. This information is found in paragraphs two and three of the company OPORD. Leaders also identify the tasks, purposes, and dispositions for all adjacent maneuver elements under the company’s control.

Unit’s Purpose

2-34. The platoon leader/*platoon commander* locates the platoon’s purposes in the concept of the operation in paragraph three of the company OPORD. The platoon’s purpose helps achieve the purpose of the immediate higher HQ. If platoon leaders/*platoon commanders* are unclear of their purpose, they should ask the company commander for further explanation.

2-35. Understanding the company commander's intent and purpose helps the platoon leader/*platoon commander* in executing the philosophy of mission command. In the presence of new information, the platoon leader/*platoon commander* knows the intent and purpose of the next higher HQ, and so, can adjust as needed to meet them. The platoon leader/*platoon commander* must be able to answer the question "If all else fails around me, what must my platoon accomplish and why?"

Tasks

2-36. Platoon leaders/*platoon commanders* identify and understand the task(s) required to accomplish a given mission. The three types of tasks are:

- Specified.
- Implied.
- Essential.

2-37. A **specified task** is a task specifically assigned to a unit by its higher headquarters (FM 6-0). These types of tasks are found in paragraph three of the company OPORD, under tasks to subordinate units.

2-38. An **implied task** is a task that must be performed to accomplish a specified task or mission but is not stated in the higher headquarters' order (FM 6-0). Implied tasks come from a detailed analysis of the company OPORD, enemy situation and COA, terrain, and from knowledge of doctrine and history. The platoon leaders/*platoon commanders* rely upon their experience and the experience of the leaders in the platoon to help with identifying the implied tasks.

2-39. An **essential task** is a specified or implied task that must be executed to accomplish the mission (FM 6-0). The platoon leaders/*platoon commanders* make the decision on which task is essential or may be told directly by the company commander. The essential task, along with the platoon's purpose, is in the company OPORD, paragraph three's concept of operations (if an implied task) or tasks to subordinate units (if a specified task).

Note. Some specified, implied, and essential tasks that directly affect the platoon may be written into an annex and not included in paragraph three of the company OPORD itself. Either the platoon leader/*platoon commander* or platoon sergeant should review, at a minimum, Annex C Operations from the battalion/squadron OPORD, if available and if time permits.

Constraints

2-40. A **constraint** is a restriction placed on the command by a higher command. A constraint dictates an action or inaction, thus restricting the freedom of action of a subordinate commander (FM 6-0). Constraints are primarily found in paragraph three of the company OPORD.

2-41. Examples of constraints may be resource limitations, such as Class III or Class V transport capacity, or in the operational environment, such as the load capacity of a bridge the platoon must traverse. Overlay graphics such as restricted fire lines or no-fire areas are also examples of constraints.

Restated Mission

2-42. The platoon leader/*platoon commander* concludes the mission analysis by restating the platoon mission. To do this, they answer the five Ws:

- Who (the platoon).
- What (the platoon's essential task and type of operation).
- When (this is the time given in the company OPORD).
- Where (the objective or location stated in company OPORD).
- Why (the platoon's purpose, taken from the company's concept of the operation).

Note. Example mission statement: 1/A/2-34AR, conducts a movement to contact from PL ULYSSES to PL GUNTHER NLT 121200JUN2019 to destroy enemy mechanized Infantry vicinity OBJ IMHOF.

Defined Operational Environment

2-43. Platoon leaders/*platoon commanders* should understand the difference between each of the areas and what their responsibility may be in each:

- **Area of operations** – An operational area defined by the joint force commander for land and maritime forces that should be large enough to accomplish their missions and protect their forces (JP 3-0).
- **Area of influence** – A geographical area wherein a commander is directly capable of influencing operations by maneuver or fire support systems normally under the commander's command or control (JP 3-0).
- **Area of interest** – That area of concern to the commander, including the area of influence, areas adjacent thereto, and extending into enemy territory. This area also includes areas occupied by enemy forces who could jeopardize the accomplishment of the mission (JP 3-0).

2-44. The tank platoon primarily operates in the company or battalion's/squadron's AO based on maneuver control graphics, which includes direct fire control measures and fire support control measures, provided by the higher HQ.

Visual Aids

2-45. Platoon leaders/*platoon commanders* prepare, or receive, a graphic depiction of terrain to help explain their findings regarding the effects of terrain and weather on the mission. The graphic depiction of terrain can be a photograph, digital map, overlay for a map sheet, or a terrain model. In it, leaders show terrain mobility classifications, key

terrain, intervisibility lines, known obstacles, avenues of approach, and mobility corridors (refer to ATP 2-01.3 for more information).

Analysis of Enemy

2-46. The second mission variable to consider is the enemy. The battalion/squadron intelligence officer (S-2) provides an analysis of the enemy with which the battalion/squadron or company anticipates contact. However, platoon leaders/*platoon commanders* still need to know and understand the enemy's disposition, composition, strengths, doctrine (if known), equipment capabilities, vulnerabilities, and probable COA. Additionally, the line between enemy combatants and civilian noncombatants is sometimes unclear and therefore requires the leader to understand the laws of war, the rules of engagement (ROE), and the local situation.

2-47. Analyzing the enemy answers the question, "What is the enemy doing and why?" The platoon leader/*platoon commander* also looks to answer—

- What is the composition and strength of the enemy force?
- What are the capabilities of their weapons? Other systems?
- What is the location of current and intercepted enemy positions?
- What is the enemy's most probable COA? (defend, reinforce, attack, withdraw, or delay).

Assumptions

2-48. Platoon leaders/*platoon commanders* continually improve their situational understanding of the enemy and update their enemy templates (analog and digital) as new information becomes available. Deviations or significant conclusions reached during enemy analysis that could positively or negatively affect the company's plan are brought to the company commander for awareness and acted upon if necessary.

How the Enemy Will Fight

2-49. The platoon leader/*platoon commander* should understand when, where, and how the enemy has historically used their assets. A doctrinal template is a visual illustration of how the enemy force looks and acts without the effects of weather and terrain and should be provided in the company OPORD or made available from the battalion/squadron S-2. This type of understanding is the starting point for the leader's enemy analysis.

2-50. The enemy may not fight using any form of structured or published doctrine. In such a situation, platoon leaders/*platoon commanders* rely upon the assessments that are made by the battalion/squadron S-2 and passed down through the company commander.

Composition

2-51. Platoon leaders/*platoon commanders* determine the types of vehicles, soldiers, and equipment the enemy could use against the tank platoon. They should be familiar with the basic characteristics of the enemy units and platforms identified.

Disposition

2-52. From the battalion/squadron S-2 and company commander's input, platoon leaders/*platoon commanders* determine how the enemy is (or might be) arrayed, the echelon from where the enemy originated, and the disposition of the next two higher enemy elements. Previous terrain analysis also helps illuminate where the enemy may or may not be able to go, based upon the number and types of vehicles in their formation.

Strength

2-53. The strength of the enemy element templated in the platoon's AO can be made available by way of requests for information made through the company commander to the battalion/squadron S-2.

Capabilities

2-54. The platoon leader/*platoon commander* must know what weapon systems the templated enemy possesses. Knowing the maximum effective ranges of the enemy systems, the platoon leader/*platoon commander* can better determine when to transition from movement to maneuver or when to initiate contact within the defense.

Recent Activities

2-55. Through the company commander, platoon leaders/*platoon commanders* can request any recent enemy activities in the platoon's or company's AO from the battalion/squadron S-2. Knowing what the enemy has done in the past, can be an indicator as to what is to come in the future.

Enemy Situation Template

2-56. The situation template is a refined version of the doctrinal template, taking into account the effects of terrain, weather, and all previous enemy analysis considerations up to this point. The platoon leader/*platoon commander* may receive a detailed situation template from the company commander, either by an analog map overlay or digital joint capabilities release graphic but should be prepared to generate one if necessary, for the platoon. This situation template is portrayed one echelon lower than the one developed by the next higher HQ. For example, if the company commander determines the enemy is defending with three tanks, the platoon leader/*platoon commander* determines the enemy primary, alternate, and supplementary positions.

2-57. Platoon leaders/*platoon commanders* include in their situation template the likely sectors of fire of the enemy weapons and tactical and protective obstacles, either confirmed or templated. Table 2-1 shows recommended situation template items. (Refer to ATP 2-01.3 for more information.)

Table 2-1. Recommended enemy situation template items

<i>Defense</i>	<i>Offense</i>
Primary, alternate, subsequent positions	Attack formations
Engagement area	Axes of advance
Individual vehicles	Firing lines
Crew-served weapons	Objectives
Tactical and protective obstacles	Reserve force commitment
Trenches	Planned indirect-fire targets
Planned indirect-fire targets	Situational obstacles
Observation posts	Reconnaissance objectives
Command and control positions	Reconnaissance force routes
Final protective fires and final protective line	Phase lines
Locations of reserves	Planned point of penetration
Routes for reserve commitment	
Travel time for reserve commitment	
Battle positions, strong point, area of operation	
Sectors of fire	

2-58. The situation template is a briefing tool for the platoon leader/*platoon commander* and is only an estimate of the enemy disposition and must be changed when new information adjusts previous assumptions.

Note. Many current allies possess and operate equipment similar or almost identical to that of current threat militaries. All platoon members need to possess a robust knowledge of vehicle identification, capable of identifying allied and enemy vehicles from multiple angles, at varying distances, and in limited visibility conditions.

Information Requirements

2-59. Commander's critical information requirements consist of priority intelligence requirements and friendly force information requirements (see figure 2-4):

- Priority intelligence requirements are information a leader, in this case the company or battalion/squadron commander, needs to know about terrain or enemy to make a critical decision. They are clear, answerable, focused on a single question, and necessary to drive an operational decision.
- Friendly force information requirements include information leaders need to know about their units or about adjacent units to make critical decisions.

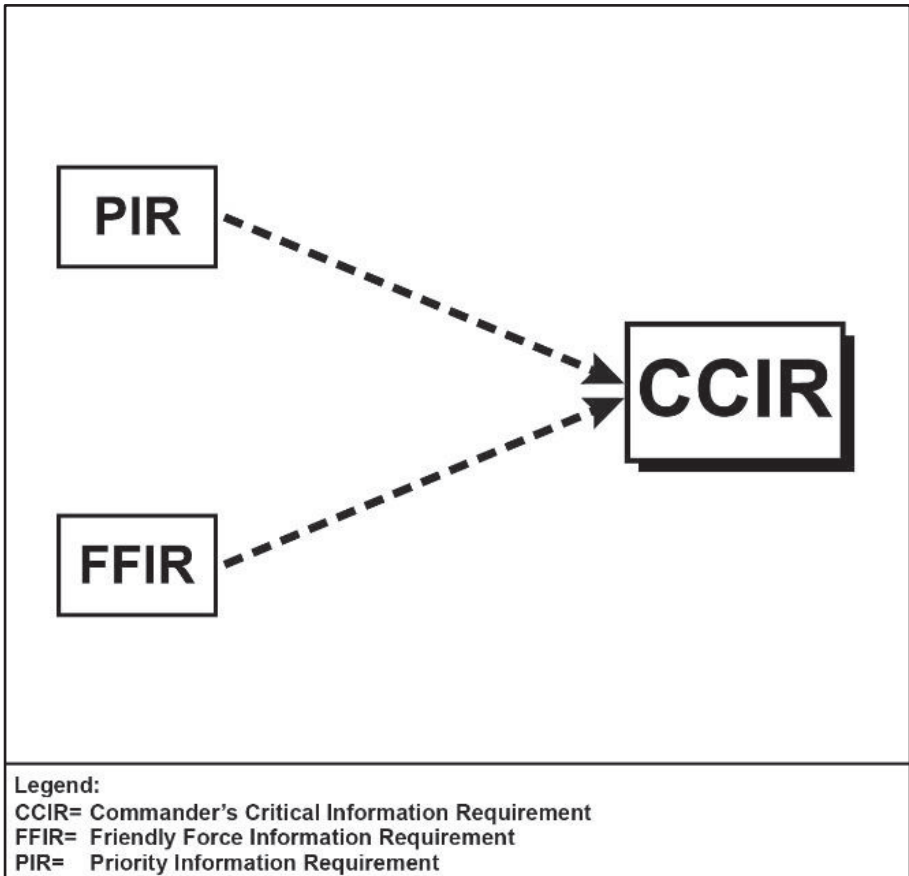


Figure 2-4. Commander's critical information requirement

2-60. The platoon leader/*platoon commander* may be tasked either directly or indirectly to answer one or more of the company or battalion/squadron commander's information requirements and must ensure that all personnel in the tank platoon know what to look for, or report changes to friendly capabilities.

2-61. Essential elements of friendly information are not commander's critical information requirements, but are critical aspects of a friendly operation that, if known by the enemy, would compromise or lead to failure of the operation. Consequently, this information must be protected from identification by the enemy. For example, the location of the company command post or company trains.

Analysis of Terrain and Weather

2-62. Analysis of terrain answers the question, "What is the terrain's effect on the mission?" Platoon leaders/*platoon commanders* consider the effects of manmade and natural terrain in conjunction with the weather on friendly and enemy operations.

2-63. Terrain can be categorized into three separate categories:

- Unrestricted. Terrain free of restrictions to movement; no actions are needed to enhance mobility. For the tank platoon, unrestricted terrain typically is flat or moderately sloped, with scattered or widely spaced obstacles such as trees or rocks.
- Restricted. Terrain hindering movement somewhat. Little effort is needed to enhance mobility, but units might have to adjust speed and formations, or make frequent detours. For the tank platoon, restricted terrain typically means moderate to steep slopes or moderate to dense spacing of obstacles such as trees, rocks, or urban. Swamps and rugged ground are two examples of restricted terrain for armored forces.
- Severely restricted. Terrain which severely hinders or slows movement in combat formations unless some effort is made to enhance mobility. Engineer forces might be needed to improve mobility or the platoon might have to deviate from doctrinal tactics. Steep slopes, densely spaced obstacles, urban, and an absence of a developed road system characterize severely restricted terrain.

2-64. Terrain analysis should produce several specific conclusions for the platoon leader/*platoon commander*:

- Potential battle, support-by-fire, and attack-by-fire positions.
- Possible engagement areas (EAs) and ambush sites.
- Asset locations such as enemy command posts or ammunition caches.
- Template of enemy forces and essential weapon systems.
- Likely avenues of approach.
- Observation post locations.
- Potential breach locations.
- Areas which increase the range of communications systems.
- Positioning of own assets.
- Understanding of time and space relationships of events, leading to thorough contingency plans.
- Identifying possible enemy indirect firing points.

- Selecting of movement techniques and formations, including when to transition from movement to tactical maneuver.

2-65. Limited planning time may force platoon leaders/*platoon commanders* to prioritize their terrain analysis. For example, in the conduct of an attack, they might prioritize the areas immediately around their objective for analysis, followed by the platoon's specific axis leading to the objective.

2-66. From the modified combined obstacle overlay developed by the battalion/squadron S-2, platoon leaders/*platoon commanders* gain an appreciation of the general nature of the ground and effects of weather. They must go beyond passing along the modified combined obstacle overlay to their tank commanders or making general observations of the terrain such as "This is high ground," or "This is a stream." They must conduct their own analysis and determine how the terrain and weather uniquely affects the enemy and their platoon.

2-67. Following their analysis of the terrain, platoon leaders/*platoon commanders* develop an analog, a digital (or both) graphic terrain analysis overlay. This product is similar to the modified combined obstacle overlay in that it shows the critical military aspects of terrain. Not only does it facilitate planning, but it also aids in briefing subordinate tank commanders.

2-68. In general, terrain and weather do not favor one side over the other unless one is better prepared to operate in the environment or is more familiar with it. The terrain, however, may favor defending or attacking. Platoon leaders/*platoon commanders* analyze terrain using the categories of observation and fields of fire, avenues of approach, key terrain, obstacles, and cover and concealment (OAKOC)/*key terrain, observation and fields of fire, cover and concealment, obstacles, and avenues of approach (KOCOA)*.

OAKOC/KOCOA

2-69. The platoon leader/*platoon commander* analyzes the military aspects of terrain using OAKOC/*KOCOA*, determining the effects of each aspect of terrain on friendly and enemy forces.

Obstacles

2-70. Platoon leaders/*platoon commanders* identify existing (natural or manmade) and reinforcing (tactical or protective) obstacles limiting mobility in the AO:

- Existing obstacles.
 - Natural. Includes rivers, forests, mountains, ravines, gaps and ditches more than three meters wide, tree stumps and large rocks more than 18 inches high, forests with trees eight inches or more in diameter (with less than four meters between trees.)
 - Manmade. Includes urban, canals, railroad embankments, buildings, power lines, or telephone lines.
- Reinforcing obstacles.

- Tactical. Inhibit the ability of the opposing force to move, mass, and reinforce. Examples include mine fields (conventional and situational), AT ditches, or wire obstacles.
- Protective. Offer close-in protection and are important to survivability.

2-71. Offensive considerations when analyzing obstacles and restricted terrain:

- How is the enemy using obstacles and restricted terrain features?
- What is the composition of the enemy's reinforcing obstacles?
- How will obstacles and terrain affect the movement or maneuver of the unit?
- If necessary, can such features be avoided or reduced?
- How does the platoon detect and, if desired, bypass the obstacles?
- Where has the enemy positioned weapons to cover the obstacles, and what type of weapons are they using?
- If the platoon must support a breach, where is the expected breach site and where will the enemy overwatch the obstacle?

2-72. Defensive considerations when analyzing obstacles and restricted terrain:

- Where does the enemy want to go?
- Where can the platoon kill the enemy?
- How does the platoon get the enemy to go there?
- How will existing obstacles and restricted terrain affect the enemy?
- How can the platoon use these features to force the enemy into its EA, deny the enemy an avenue, or disrupt the enemy's movement?

Avenues of Approach

2-73. An **avenue of approach** is a path used by an attacking force leading to its objective or to key terrain. Avenues of approach exist in all domains (ADP 3-90). Avenues of approach exist in all domains. Avenues of approach are classified by type (mounted, dismounted, air, or subterranean), formation, and speed of the largest unit traveling on it. The platoon leader/*platoon commander* will primarily focus on identifying mounted avenues of approach.

2-74. If not already identified by the company commander or battalion/squadron staff, the platoon leader/*platoon commander* may group mutually supporting mobility corridors to form an avenue of approach.

2-75. Mobility corridors are classed based on the distance between the terrain features that form the corridor, though their ranges are not absolute but reflect the relative and approximate distance between terrain features. For more information on this, see ATP 2-01.3, chapter 4.

2-76. Offensive considerations the leader can include in an evaluation of avenues of approach:

- How can the platoon use each avenue of approach to support movement and maneuver?

- How will each avenue support movement techniques, formations and, once the platoon makes enemy contact, maneuver?
- Will variations in trafficability force changes in formations or movement techniques, or require clearance of restricted terrain?
- What are the advantages and disadvantages of each avenue?
- What are the enemy's likely counterattack routes?
- What lateral routes could the platoon use, and which could the enemy use to threaten the platoon's flanks?
- How will each avenue of approach affect the rate of movement?

2-77. Defensive considerations the leader can include in an evaluation of avenues of approach:

- What are all likely enemy avenues into my AO?
- How can the enemy use each avenue of approach?
- What lateral routes could the enemy use to threaten our flanks?
- What avenues would support a friendly counterattack or repositioning of forces?

Key Terrain

2-78. **Key terrain** is an identifiable characteristic whose seizure or retention affords a marked advantage to either combatant (ADP 3-90). It is a conclusion, usually arrived at after enemy analysis and development of the plan, rather than an observation.

2-79. A prominent hilltop overlooking an avenue of approach may or may not be key terrain. Clear observation and fields of fire means little if the enemy can easily bypass it. However, if it offers cover and concealment, observation, and good fields of fire on multiple avenues of approach, or on the only avenue of approach, then it offers a definite advantage to whoever controls it.

2-80. **Decisive terrain** is key terrain whose seizure and retention is mandatory for successful mission accomplishment (ADP 3-90). Some situations have no decisive terrain.

2-81. Platoon leaders/*platoon commanders* look at the tactical considerations in analyzing key terrain and consider the following:

- Is the terrain important for friendly observation, both for commanding and controlling and for calling for fire?
- What terrain is important to the enemy and why?
- Is it important to the platoon/company?
- What terrain has higher HQ named as key?
- Is this terrain also important to the enemy?
- Is the enemy controlling this key terrain?
- How does the platoon gain or maintain control of key terrain?
- What terrain is essential for communications nodes dictating the employment of digital communications equipment?

Observation and Fields of Fire

2-82. Platoon leaders/*platoon commanders* identify locations along each avenue of approach providing clear observation and fields of fire for the attacker and defender. They analyze the area surrounding key terrain, objectives, EAs, and obstacles; locate intervisibility lines (ridges or horizons which can hide equipment or personnel from observation); they assess the ability of the attacking force to overwatch or support movement (with direct fire). An intervisibility line analysis enables the leader to visualize the profile view of terrain when only a topographic product (map) is provided (see figure 2-5).

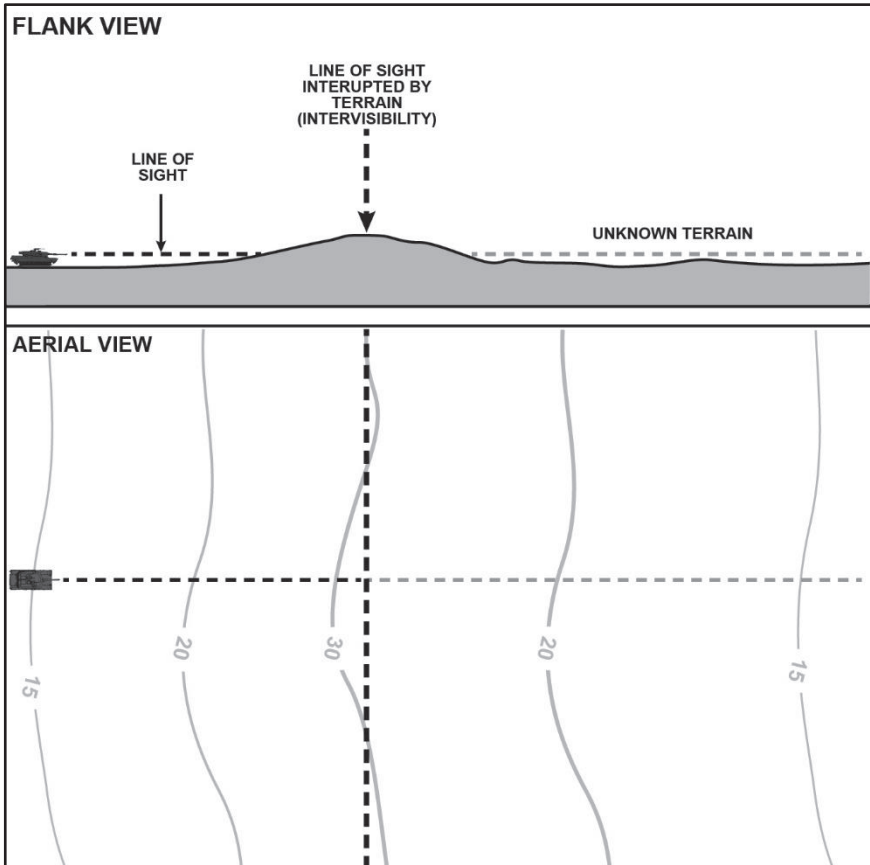


Figure 2-5. Example intervisibility line

Note. An intervisibility line exists only relative to the location of the known or suspected enemy position and the tank platoon. Once the tank platoon or enemy unit moves from its location, the intervisibility line may no longer serve the function of masking friendly movement.

2-83. When analyzing fields of fire, platoon leaders/*platoon commanders* consider the friendly and enemy potential to cover avenues of approach and key terrain, in particular, with direct fires. Additionally, platoon leaders/*platoon commanders* identified as an observer, either primary or alternate, for indirect fires, identify positions where they can adequately observe the impact and effects of mortar or artillery rounds and adjust as required. The line of sight analysis tool provided in the M1-series mission command platform can help in identifying fields of fire from a designated location on a digital map.

- 2-84. Offensive considerations when analyzing observation and fields of fire include:
- Are clear observation and fields of fire available on or near the objective for enemy observers and weapon systems?
 - Where can the enemy concentrate fires?
 - Where will the enemy be unable to concentrate fires?
 - Where is the enemy vulnerable?
 - Where can friendly forces conduct support by fire or assault by fire?
 - Where are the natural target registration points?

- 2-85. Defensive considerations in analyzing observation and fields of fire:
- What locations have clear observation and fields of fire along enemy avenues of approach?
 - Where will the enemy establish firing lines or support-by-fire positions?
 - Where will the platoon be unable to mass fires?
 - Where is the dead space in the AO? Where is the platoon vulnerable?
 - Where are the natural target registration points?
 - Where can the platoon destroy the enemy? Can the platoon observe and fire on the enemy with at least two-thirds of the platoon's combat power?
 - How obvious are these positions to the enemy?

Cover and Concealment

2-86. All leaders in the platoon look at the terrain, foliage, structures, and other features along avenues of approach (and on objectives or key terrain) to identify sites offering cover and concealment. **Cover** is protection from the effects of fires (FM 3-96) whereas **concealment** is protection from observation or surveillance (FM 3-96). In the defense, positions must be lethal to the enemy and survivable to the platoon.

2-87. Concealment, more specifically camouflage, is critical when the possibility of enemy aviation or unmanned aerial systems may be present in the AO. Preventing the enemy from identifying the composition or disposition of the tank platoon prevents the likelihood of being targeted by enemy direct or indirect fires.

- 2-88. Offensive and defensive considerations must be made:
- Offensive considerations include:
 - What axis affords clear fields of fire and cover and concealment?

- Which terrain provides bounding elements with cover and concealment while increasing lethality?
- Defensive considerations include:
 - What locations afford cover and concealment as well as good observation and fields of fire?
 - How can friendly and enemy forces use the available cover and concealment?

Military Aspects of Weather

2-89. The military aspects of weather are:

- Visibility.
- Winds.
- Precipitation.
- Cloud cover/ceiling.
- Temperature and humidity.
- Atmospheric pressure (as required).

2-90. Platoon leaders/*platoon commanders* determine how the weather will affect the visibility, mobility, and survivability of the platoon and that of the enemy, reviewing the company commander's conclusions and identifying their own. (Refer to ATP 2-01.3).

Visibility

2-91. Platoon leaders/*platoon commanders* identify critical conclusions about visibility factors such as light data, fog, smog, smoke, and dust. They consider light data and identify critical conclusions about begin morning nautical twilight, sunrise, sunset, end of evening nautical twilight, moonrise, moonset, and percentage of illumination. Some additional visibility considerations include:

- Will the sun rise behind the attack or in the platoon's eyes?
- Will the platoon attack toward the sunrise?
- How can the platoon take advantage of the limited illumination?
- How will this affect friendly and enemy target acquisition?
- Will the current weather favor the use of smoke to obscure during breaching?
- When are night vision devices most effective or ineffective?
- Are certain parts of the platoon AO prone to fog at particular times of the day or times of the year?

Winds

2-92. Winds of sufficient speed can reduce the combat effectiveness of a force downwind as the result of blowing dust, obscurants, sand, or precipitation. The upwind force usually has better visibility. CBRN operations usually favor the upwind force. Windblown sand, dust, rain, or snow can reduce the effectiveness of radar and other communications systems.

2-93. Wind is described as “from...to...” as in “winds are from the east moving to the west.” The leader must answer these questions:

- Will wind speed cause obscurants to dissipate quickly?
- Will wind speed and direction favor enemy use of obscurants?
- Will wind speed and direction affect the employment of available mortars?
- What is the potential for CBRN contamination?
- Will wind speed affect the ballistics of organic platoon weapon systems?

2-94. The smell of petroleum products used by the platoon can carry in heavy winds, revealing the general location of a concealed or camouflaged position. Depending on the direction, heavy winds can either mask the sound of a tank’s turbine engine or cause the sound to carry considerable distances. All leaders in the tank platoon must consider how their individual tank will benefit from, or be hindered by, the wind.

Precipitation

2-95. Precipitation includes rain, sleet, snow, and hail. Precipitation affects soil trafficability, visibility, and optical systems. Heavy precipitation can reduce the quality of supplies in storage. Heavy snow cover can reduce the efficiency of many communications systems as well as degrade the effects of many munitions and air operations. Some precipitation questions to answer include:

- How will precipitation (or lack of it) affect the mobility of the unit or of enemy forces?
- How can precipitation (or lack of it) add to the unit achieving surprise?
- Are there particular locations in the AO that the platoon should avoid during times of increased precipitation either due to flooding or extremely loose soil?
- Are there particular portions of the route that may be susceptible to freezing or black ice due to precipitation?

Cloud Cover

2-96. Cloud cover affects ground operations by limiting illumination and solar heating of targets. Heavy cloud cover may degrade target acquisition systems, infrared guided munitions, and general aviation operations. Partial cloud cover can cause glare, a condition attacking aircraft might use to conceal their approach to the target. Some types of clouds reduce the effectiveness of radar systems. Some cloud cover questions include but are not limited to:

- How will cloud cover affect unit operations at night? How will it affect the enemy?
- When are the periods of time that cloud cover will reduce the effectiveness of night vision equipment?
- How will cloud cover affect the target acquisition?
- How will cloud cover affect helicopter and close air support?

Temperature and Humidity

2-97. Extreme shifts in temperature and humidity reduce personnel and equipment capabilities and may require the use of special shelter or equipment. Air density decreases as temperature and humidity increase. Thermal crossovers, which occur when target and background temperatures are nearly equal, degrade thermal target acquisition systems. The length of crossover time depends on air temperature, soil and vegetation types, amount of cloud cover, and other factors. The leader identifies critical factors about temperature, including high and low temperatures, infrared crossover times, and effects of obscurants and CBRN. Some considerations include:

- How will temperature and humidity affect the crew and equipment?
- Will temperatures and humidity favor the use of nonpersistent CBRN?
- Will thermal sights be as effective given the time of day? When is thermal crossover?
- How will battery life in handheld devices, such as radios and optics, be affected by extreme heat or extreme cold?

Atmospheric Pressure (As Required)

2-98. Atmospheric pressure may significantly impact aviation (including unmanned aircraft systems) operations. Based on the elevation of the operational area, atmospheric pressure affects the lift capacity of aircraft, including resupply and medical evacuation (MEDEVAC) helicopters, if present in the AO.

Analysis of Troops and Support Available

2-99. Platoon leaders/*platoon commanders* realistically and objectively study their platoon to determine the number, type, capabilities, and condition of available friendly troops and other available support. Analysis of troops and support answers the question, “What assets are available to accomplish the mission and what is the combat potential of the unit?” The platoon leader/*platoon commander* as well as the platoon sergeant look to answer these types of questions:

- What are the strengths and weaknesses of subordinate leaders?
- What is the supply status of Class I/III/V and other necessary items?
- What is the present physical condition of the platoon (health, morale, sleep)?
- What is the condition of assigned platoon equipment?
- What is the unit’s training status and experience relative to the mission?
- What additional personnel or units will accompany?
- What additional assets are required to accomplish the mission?
- What is the condition of attached units or those in direct support?
- What type of indirect fire, by type, is available and when will it be come available?

2-100. The platoon leader/*platoon commander* cannot be expected to think of every aspect of the platoon to analyze and so asks for help when the situation exceeds the

platoon's capabilities. Assistance can come from either within, or external to, the company.

Analysis of Time Available

2-101. Platoon leaders/*platoon commanders* see their platoon in time and space. As events occur, the platoon leaders/*platoon commanders* adjust the time available to the tank platoon and assess its impact on what they want to accomplish. Understanding how long it takes to execute a task determines where in space the platoon is upon completion of that task and so must consider:

- Overall time available.
- Priorities of work to be accomplished, including security, maintenance, resupply, coordination, rehearsals, inspections, and sleep.
- Planning and preparation.
- Times specified by the commander in the OPORD for such activities as movement, reconnaissance, rehearsals, and logistics package (LOGPAC) operations?
- Company and battalion/squadron timeline.
- Enemy timeline.

2-102. Platoon leaders/*platoon commanders* conduct reverse planning to ensure that all specified, implied, and essential tasks can be accomplished in the time available. They develop a reverse planning schedule (timeline) beginning with actions on the objective and working backward through each step of the operation and preparation to the present time.

Analysis of Civil Considerations

2-103. **Civil considerations** are the influence of manmade infrastructure, civilian institutions, and attitudes and activities of civilian leaders, populations, and organizations within an area of operations on the conduct of military operations (ADRP 5-0). Civil considerations of the environment can either help or hinder friendly or enemy forces. The difference lies in taking the time to learn the situation and its possible effects on the operation. Analysis of civil considerations answers three critical questions:

- How do civilian considerations affect the operation?
- How does the operation affect the civilians?
- How do our forces build national will in our AO?

2-104. Battalion/squadron provides the company and platoon with civil considerations affecting the brigade's mission. The memory aid the battalion/squadron may use to analyze and describe these civil considerations that include areas, structures, capabilities, organizations, people, and events (ASCOPE). (Refer to ATP 2-01.3 for more information.)

RISK ASSESSMENT

2-105. **Risk assessment** is the identification and assessment of hazards (first two steps of the risk management process) (JP 3-07.2). Leaders at all levels manage risk to protect the force and aid in mission accomplishment and so the platoon leader/*platoon commander* identifies risks based on the results of their mission analysis. Risk assessment is a continual process undertaken by the platoon leader/*platoon commander* and platoon sergeant throughout the duration of the mission.

2-106. Once identified, risk is mitigated or eliminated through the use of controls. The commander will establish overall risk tolerance level for the mission. Platoon leaders/*platoon commanders* determine in their plan how to reduce risk to an acceptable level. For example, fratricide may be mitigated by taking into consideration surface danger zones and risk estimate distances, resulting in the emplacement of target reference points (TRPs) and phase lines (PLs) used to control maneuver and thus reduce this risk. Refer to ATP 5-19 for more information on the risk management process.

DEVELOP THE PLAN AT THE PLATOON LEVEL

2-107. The platoon leader/*platoon commander* generally receives a directed COA action from the company commander. As a result, the platoon leader/*platoon commander* has only to determine how to accomplish the platoon's assigned task while meeting the commander's intent.

2-108. The platoon leader/*platoon commander* begins to develop a plan that: must accomplish the given task (suitable); is executable given the skills, time, and resources on hand (feasible); the military advantage gained justifies the expected cost (acceptable); differs sufficiently from other approaches (if required) considered to achieve the given task (distinguishable); fully addresses the who, what, where, when and how from start to finish (complete).

2-109. The platoon leaders/*platoon commanders* compare and contrast friendly combat power with the enemy, looking to:

- Identify an enemy weakness to exploit.
- Identify friendly strengths to exploit the enemy weakness.
- Identify enemy strengths to mitigate.
- Identify friendly weaknesses to protect.

2-110. Platoon leaders/*platoon commanders* may be able to accomplish the given task and purpose in more than one way. They consider TTP from doctrine, company or battalion SOPs, history, or other resources to determine if a solution to a similar tactical problem exists already.

2-111. Platoon leaders/*platoon commanders* determine what combinations of personnel and systems are needed to accomplish the assigned task. This is known as "assigning troops to task," and is based on the METT-TC conditions the leader faces, such as having an attachment of engineers or other enabler.

2-112. Platoon leaders/*platoon commanders* identify the best ways to use the available terrain and employ the platoon's strengths against the enemy's weaknesses. They develop the maneuver control measures necessary to execute the mission, prevent fratricide, and clarify the task and purpose.

2-113. Platoon leaders/*platoon commanders* ensure every tank in the platoon is fully employed, every asset is attached, and adequate control is provided for each element. To maintain lethality, the platoon leader/*platoon commander* does not separate the tanks below the platoon level.

2-114. Platoon leaders/*platoon commanders* solidify the plan by notionally fighting it against how they believe the enemy will operate. Asking the question "what if?" throughout the process can help identify points of friction not previously considered up to that point.

2-115. This process may be done solely by platoon leaders/*platoon commanders* who review the plan up to that point, or by including the platoon sergeant's and other two tank commander's input as well. This enables the platoon leader/*platoon commander*—

- To determine how to maximize the effects of the platoon while protecting the platoon and minimizing collateral damage.
- To anticipate events in the AO.
- To determine conditions and any additional resources required for success.
- To identify additional control requirements.
- To identify friendly coordination requirements.
- To appreciate the time, space, and triggers needed to integrate direct, and if available, indirect fire support.
- Develop control measures to aid in control, flexibility, and synchronization.
- Project sustainment expenditures, friendly casualties, and resulting medical requirements.
- Complete paragraphs three, four, and five of the OPORD.

STEP 4 – INITIATE MOVEMENT

2-116. Platoon leaders/*platoon commanders* initiate movements necessary to continue mission preparation or to posture the unit for starting the mission. This step can be executed anytime throughout the sequence of TLP. It can include execution of priorities of work, movement to an assembly area (AA), battle position (BP), or new AO or the movement of guides or quartering parties.

STEP 5 – CONDUCT RECONNAISSANCE

2-117. To exploit the principles of speed and surprise, platoon leader/*platoon commander* should weigh the advantages of reconnoitering personally against only using a map or product from a higher HQ. When possible, platoon leaders/*platoon commanders* and subordinates in the platoon should conduct their own visual

reconnaissance of as much of the objective area as possible, time, and safety permitting. Nothing replaces walking the ground upon which one will execute the operation.

2-118. The leader's recon might include moving to or beyond the line of departure (LD), reconnaissance of an AO, or walking from the forward edge of the battle area back to and through the platoon AO or BP along likely enemy avenues of approach. For defensive operations, the platoon leader/*platoon commander* should conduct a reconnaissance of the EA, all platoon BPs, and the routes to be used. Platoon leader/*platoon commander* also can incorporate sensors on the tank as surveillance tools (day or night), based on an analysis of METT-TC.

2-119. The leader must include disseminating results and conclusions arrived from reconnaissance into their timeline. The platoon leader/*platoon commander* also considers how to communicate changes, if any, in the initial plan to subordinates whether it be face-to-face, over the radio, or through a digital update.

2-120. Platoon leaders/*platoon commanders* take into consideration that the mere act of conducting a leader's reconnaissance may alert the enemy of the platoon's intention and potentially eliminate the element of surprise.

STEP 6 – COMPLETE THE PLAN

2-121. Platoon leaders/*platoon commanders* refine their plan, preparing analog and digital overlays, complete sustainment requirements, and update the tentative plan based on the latest reconnaissance. The platoon leaders/*platoon commanders* prepare briefing sites and other briefing materials they might need to present the OPORD directly to their platoon. Based upon platoon SOP and in an effort to maximize use of time, other members of the tank platoon may prepare graphics, overlays, briefing sites, or briefing materials.

2-122. Using the five-paragraph OPORD format helps platoon leaders/*platoon commanders* to explain all aspects of the operation: terrain, enemy, higher and adjacent friendly units, unit mission, execution, support, and mission command (see figure 2-6 on page 2-31). The format serves as a checklist to ensure they cover all relevant details of the operation. Ultimately, the plan should be kept as simple as possible, while at the same time ensuring the platoon scheme of maneuver supports the company commander's intent.

STEP 7 – ISSUE OPERATION ORDER

2-123. The OPORD precisely and concisely explains the platoon leader's/*platoon commander's* concept of how the platoon accomplishes the mission. Time and security permitting, the platoon leader/*platoon commander* issues the order from a vantage point overlooking the terrain on which the platoon will maneuver to as many members of the platoon as possible. The OPORD is delivered quickly, with confidence, and in a manner allowing subordinates to concentrate on understanding the platoon leader's/*platoon commander's* vision—not just copying what is said verbatim.

2-124. The platoon leader/*platoon commander* uses a terrain model, sand table, sketches, or the map to orient the platoon. They can also build a model of the AO using a briefing kit that contains such items as engineer tape, colored yarn, 3-by-5-inch index cards, and “micro” armor vehicle models.

2-125. Whenever possible, platoon leaders/*platoon commanders* issue the order in person. They look into the eyes of their subordinate leaders to ensure each one understands the mission and what the platoon must achieve. If platoon leaders/*platoon commanders* already addressed an item adequately in a previous WARNORD, they simply state “No change,” or provide necessary updates. Ultimately, the platoon leader/*platoon commander* is free to brief the OPORD in the most effective manner to convey information to subordinates, whether over the radio, through the available digital mission command platform, or on a sand table, terrain model, or map.

2-126. Platoon leaders/*platoon commanders* complete the order with a confirmation brief. At a minimum, tank commanders should be able to backbrief the platoon’s mission and intent, the company commander’s intent, their own tasks and purpose, and time they will inform their tank crew of the mission details if they were not present at the OPORD brief itself. This confirmation brief provides an opportunity to highlight issues or concerns.

<p><u>1. SITUATION</u></p> <ul style="list-style-type: none"> • Area of Interest • Area of Operations <ul style="list-style-type: none"> ▪ Terrain ▪ Weather • Enemy Forces <ul style="list-style-type: none"> ▪ Latest Threat Intelligence • Friendly Forces <ul style="list-style-type: none"> ▪ Two Levels Up ▪ One Level Up ▪ Adjacent Units • Attachments and Detachments <ul style="list-style-type: none"> ▪ Who/Why <p><u>2. MISSION</u></p> <ul style="list-style-type: none"> • Who • What • When • Where • Why <p><u>3. EXECUTION</u></p> <ul style="list-style-type: none"> • Commander's Intent • Concept of Operations • Scheme of Movement and Maneuver <ul style="list-style-type: none"> ▪ Describe from Start to Finish ▪ Fires ▪ CASEVAC • Tasks to Subordinate Units • Coordinating Instructions <ul style="list-style-type: none"> ▪ Time Schedule ▪ CCIR (PIR, FFIR), EEFI ▪ Risk Reduction Control Measures ▪ ROE ▪ Environmental Considerations ▪ Force Protection 	<p><u>4. SUSTAINMENT</u></p> <ul style="list-style-type: none"> • Logistics <ul style="list-style-type: none"> ▪ Maintenance ▪ Transportation ▪ Field Services • Personnel Services Support <ul style="list-style-type: none"> ▪ Handling of EPW • Army Health System Support <ul style="list-style-type: none"> ▪ MEDEVAC ▪ Preventive Medicine <p><u>5. COMMAND AND SIGNAL</u></p> <ul style="list-style-type: none"> • Command <ul style="list-style-type: none"> ▪ Location of Leaders • Control <ul style="list-style-type: none"> ▪ Command Post Location • Signal <ul style="list-style-type: none"> ▪ Radio Frequencies ▪ Passwords/Running Pass-words ▪ Pyrotechnic Signals 																
<p>Legend:</p> <table> <tbody> <tr> <td>CASEVAC=</td> <td>Casualty Evacuation</td> <td>FFIR=</td> <td>Friendly Force Intelligence Requirements</td> </tr> <tr> <td>CCIR=</td> <td>Commander's Critical Information Requirements</td> <td>PIR=</td> <td>Priority Intelligence Requirements</td> </tr> <tr> <td>EEFI=</td> <td>Essential Elements of Friendly Information</td> <td>MEDEVAC=</td> <td>Medical Evacuation</td> </tr> <tr> <td>EPW=</td> <td>Enemy Prisoner Of War</td> <td>ROE=</td> <td>Rules Of Engagement</td> </tr> </tbody> </table>		CASEVAC=	Casualty Evacuation	FFIR=	Friendly Force Intelligence Requirements	CCIR=	Commander's Critical Information Requirements	PIR=	Priority Intelligence Requirements	EEFI=	Essential Elements of Friendly Information	MEDEVAC=	Medical Evacuation	EPW=	Enemy Prisoner Of War	ROE=	Rules Of Engagement
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Figure 2-6. Operation order format

STEP 8 – SUPERVISE AND REFINE

2-127. This final step of TLP is crucial. After issuing the OPORD, platoon leaders/*platoon commanders* and tank commanders must ensure the required activities and tasks are completed quickly before mission execution. Supervision is the primary responsibility of all leadership. Platoon leaders/*platoon commanders* and tank

commanders must check those items or events deemed important for mission accomplishment. This includes, but is not limited to—

- Conducting backbriefs on all aspects of the platoon mission.
- Ensuring the second in command in each element is prepared to execute in that leader's absence.
- Observing rehearsals of tank crews.
- Inspecting load plans to ensure crews are carrying what is necessary for the mission or what the OPOD specified.
- Inspecting the status and serviceability of weapons and communications systems.
- Inspecting maintenance activities.
- Ensuring local security is maintained.

SECTION III – REHEARSALS

2-128. Rehearsals are practice sessions conducted to prepare units for an upcoming operation or event and the most valuable tool in preparing the platoon for the upcoming operation. Effective rehearsals require crews to perform required tasks, ideally under conditions that are as close as possible to those expected for the actual operation. Participants maneuver their actual vehicles or use vehicle models or simulations while interactively verbalizing their elements' actions.

2-129. In a platoon-level rehearsal, platoon leaders/*platoon commanders* select the tasks to be rehearsed and controls execution of the rehearsal. They may designate a subordinate tank commander to role-play the enemy they anticipate to face during the operation.

Note. A rehearsal is different from the process of talking through the plan. For an example, in a rehearsal, tank commanders send a complete spot report (SPOTREP) when reporting enemy contact, rather than simply saying, "I would send a SPOTREP now."

REHEARSAL PURPOSES

2-130. Platoon leaders/*platoon commanders* use well-planned, efficiently run rehearsals to accomplish the following purposes:

- Reinforce training and increase proficiency in critical tasks.
- Reveal weaknesses or problems in the plan.
- Synchronize the actions of the tank crews.
- Confirm coordination requirements between the platoon and adjacent units.
- Improve each crewmember's understanding of the concept of the operation, the direct and indirect fire plan, anticipated contingencies, and possible actions and reactions for various situations that may arise during the operation.

REHEARSAL TYPES

2-131. The platoon leader/*platoon commander* can choose among several types of rehearsals, which include:

- Backbrief.
- Combined arms rehearsal.
- Support rehearsal.
- Battle drill or SOP rehearsal.

BACKBRIEF

2-132. A backbrief is a briefing by the tank commanders to the platoon leader/*platoon commander* to review how each intend to accomplish their portions of the mission. Normally, subordinates perform backbriefs throughout preparation. These briefs allow platoon leaders/*platoon commanders* to clarify the mission early in subordinate planning and use the backbrief to identify any problems in the concept of the operation. In the tank platoon, the platoon leader/*platoon commander* conducts backbriefs after the tank commanders have had a chance to review the OPORD but before the platoon rehearsal begins.

COMBINED ARMS REHEARSAL

2-133. A combined arms rehearsal is a rehearsal in which subordinate units synchronize their plans with each other and is normally conducted at company-level and above. If required to participate in a combined arms rehearsal, platoon leaders/*platoon commanders* generally brief their task and purpose, composition, disposition and key actions executed by phase, though the exact information briefed varies by unit SOP.

SUPPORT REHEARSAL

2-134. The support rehearsal helps synchronize each warfighting function with the overall operation. Platoon leaders/*platoon commanders* may take part in the support rehearsal depending upon their task and purpose and how it relates to the higher HQ operation.

BATTLE DRILL OR STANDARD OPERATING PROCEDURE REHEARSAL

2-135. A battle drill or SOP rehearsal ensures all participants understand a technique or a specific set of procedures. Throughout preparation, tank commanders and crews rehearse battle drills and SOPs. These rehearsals do not require a completed order from the company to execute. Platoon leaders/*platoon commanders* place priority on those drills or actions they anticipate occurring during the operation.

METHODS OF REHEARSALS

2-136. Rehearsals should follow the crawl-walk-run methodology whenever possible (see figure 2-7). This prepares the platoon for increasingly difficult conditions. (Refer to FM 6-0 for more information.) Security must be maintained, however, units can conduct these forms of rehearsals if mission variables permit—

- Full-dress rehearsal.
- Key leader rehearsal.
- Terrain-model rehearsal.
- Digital terrain-model rehearsal.
- Sketch-map rehearsal.
- Map rehearsal.
- Map rehearsal.

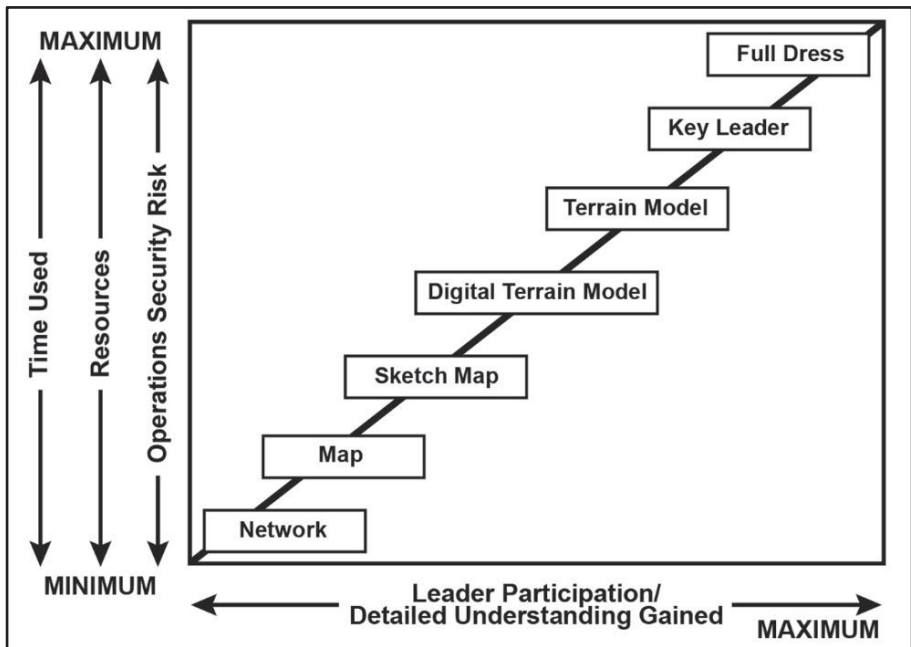


Figure 2-7. Methods of rehearsals

FULL-DRESS REHEARSAL

2-137. A full-dress rehearsal includes every participating tank platoon member and system, executed on terrain similar to the AO, initially under good light conditions, and then in limited visibility. Any attachments to the tank platoon take part in this rehearsal, bringing with them any specific equipment they will require to execute the mission.

KEY LEADER REHEARSAL

2-138. This rehearsal involves only key leaders of the organization and subordinate units and normally takes fewer resources than a full-dress rehearsal. Terrain requirements mirror those of a full-dress rehearsal. A reduced-force rehearsal can be used to prepare key leaders for a full-dress rehearsal.

TERRAIN-MODEL REHEARSAL

2-139. This technique employs an accurately constructed model to help subordinates visualize the battle. When possible, the platoon leader/*platoon commander* places the terrain model near, or where it overlooks, the actual terrain of the AO. The model should be large enough to depict graphic control measures and important terrain features for reference and orientation. Based on size, participants walk or move “micro” armor around the table or model, using complete radio transmission, to practice the actions of their own vehicles in relation to other members of the platoon. One consideration is to conceal the terrain model from enemy air assets.

DIGITAL TERRAIN-MODEL REHEARSAL

2-140. Units drape high-resolution imagery over elevation data, creating a fly through or walk-through of the mission. Often, the model links graphics, detailed information, unmanned aircraft systems (UAS), and ground imagery to key points providing accurate insight to the plan.

SKETCH-MAP REHEARSAL

2-141. Sketch-map procedures are similar to those for the terrain model rehearsal. The sketch must be large enough to allow all participants to see as each subordinate “walks” through an interactive oral presentation of their actions. Tank crews can use symbols or “micro” armor to represent their locations and maneuver on the sketch and use complete radio transmissions when executing their movements.

MAP REHEARSAL

2-142. Procedures are similar to those for the sketch-map rehearsal except that the leader uses a map and operation overlay of the same scale as the platoon leader/*platoon commander* used to plan and control the operation. This technique is useful in conjunction with a confirmation brief or backbrief involving subordinate leaders and vehicle commanders.

PRECOMBAT CHECKS AND INSPECTIONS

2-143. Precombat checks (PCCs) differ from precombat inspections (PCIs) in that they are quick combat checks performed at crew-level and designed to account for individuals and equipment. PCCs do not require formal notification to conduct. They are designed to be quick and concise, verifying that the tank crews have all necessary equipment to accomplish the mission. Examples for PCCs include the following:

- Perform pre-fire checks for all weapons, and report or repair deficiencies, if necessary.
- Weapons are boresighted and zeroed, and all sights are referred.
- Machine guns test fired, if possible.
- Ammunition checked and stored properly.
- Upload vehicles per the platoon SOP.
- Account for crews' uniforms and equipment necessary to accomplish the tasks.

Note. The standardization of load plans allows the platoon leader/*platoon commander* and platoon sergeant to quickly check accountability of equipment. It also ensures standard locations of equipment in each vehicle. This can be an important advantage if the platoon leader/*platoon commander* is forced to switch to a different vehicle during an operation.

2-144. PCIs allow the platoon leader/*platoon commander* to check the platoon's operational readiness. The key goal is to ensure that crews and vehicles are fully prepared to execute the upcoming mission. The platoon leader/*platoon commander* includes the time and location for PCIs in the platoon OPORD, reinforcing their importance and ensuring they occur as part of the pre-mission preparation.

2-145. It is essential that the entire platoon chain of command know how to conduct PCCs and PCIs per applicable SOPs. Examples of an inspection include the following:

- Perform before-operation maintenance checks, and report or repair deficiencies, if necessary.
- Perform communications checks of voice and digital systems.
- Inspect and verify maps and corresponding analog and digital graphics.
- Ensure that crews understand the plan and are in the correct uniform and mission-oriented protection posture (MOPP) level based upon the threat level.
- Ammunitions types as required by mission.
- Review the supply status of rations, water, fuel, oil, all types of ammunition, pyrotechnics, first-aid kits, and batteries (for such items as flashlights, night vision devices, and CBRN alarms).
- Ensure that vehicles are correctly camouflaged so they match the AO.

2-146. The platoon leader/*platoon commander* or platoon sergeant observes each crew during preparation for combat. They conduct the inspection once the tank commanders report that their crews and vehicles are prepared. It is understood that platoon leaders/*platoon commanders* will check items they deem critical for the upcoming operations, but the tank commanders check all items based on the platoon SOP. Failure at the tank commander level to check all systems, and not just the ones the platoon leader/*platoon commander* inspects personally, could lead to a critical element or piece of equipment to fail during operations.

ABBREVIATED TROOP LEADING PROCEDURES

2-147. When there is not enough time to conduct all eight steps in detail, such as when a change of mission occurs after an operation is in progress, the platoon leader/*platoon commander* truncates the procedures to save time. Most steps of these abbreviated TLP are done mentally, but the platoon leader/*platoon commander* skips none of the steps.

2-148. Once the order is received, the platoon leader/*platoon commander* conducts a quick map reconnaissance, analyzes the mission using the factors of METT-TC, and sends for the tank commanders. They ensure the tank commanders post the minimum required control measures on their maps and issues a FRAGORD covering the key elements of the enemy and friendly situations, the platoon mission, and the concept of the operation. The sustainment and command and signal paragraphs can be deleted if they are unchanged or covered by SOP. The platoon leader/*platoon commander* and tank commanders may also conduct a quick walk-through rehearsal of critical elements of the maneuver plan using a hastily prepared terrain model or sand table.

2-149. In some cases, there may not be enough time even for these shortened procedures. The platoon may have to move out and receive FRAGORDs by radio or at the next scheduled halt. It then becomes critical for the platoon leader/*platoon commander* to send FRAGORDs of the platoon leader's/*platoon commander's* own to the tank commanders explaining the platoon's purpose within the overall company maneuver plan.

2-150. Digital systems are valuable tools when the platoon is forced to use abbreviated TLP and FRAGORDs. They allow the platoon leader/*platoon commander* to designate waypoints to help in navigation and TRP to help in weapons orientation while in route to the objective.

2-151. Other keys to success when abbreviated procedures are in effect include a well-trained platoon; clearly developed, thoroughly understood SOPs; and an understanding by all members of the platoon of the current tactical situation. The platoon leader/*platoon commander* and platoon sergeant keep the platoon informed of the ever-changing enemy and friendly situations. They accomplish this by monitoring the company net and issuing frequent updates to the other crews using the radio and mission command systems.

COMMAND RELATIONSHIPS

2-152. Command and support relationships provide the basis for unity of command and unity of effort in operations. Command and support relationships are the basis for task-organizing. A task organization is a temporary grouping of forces designed to accomplish a particular mission. (Refer to FM 6-0 for more information.)

2-153. Nonorganic combat and sustainment assets can significantly enhance the platoon's combat capability. These elements support the company team and platoon under established command and support relationships.

2-154. The command relationships define superior and subordinate relationships between unit commanders. The tank platoon is under command of the company commander. However, within the platoon, command relationships exist between the platoon leader/*platoon commander*, platoon sergeant, and the tank commanders. Command relationships unify effort and give the platoon leader/*platoon commander* the ability to employ the platoon with maximum flexibility. Command relationships include—

- Organic.
- Assigned.
- Attached.
- Operational control.
- Tactical control.

ORGANIC

2-155. Organic forces are those assigned to and forming an essential part of a military organization. The Army establishes organic command relationships through organizational documents such as tables of organization and equipment and tables of distribution and allowances.

ASSIGNED

2-156. Assigned units remain subordinate to the higher HQ for extended periods, typically years. An example would be that first, second and third platoon are assigned to Bravo Company.

ATTACHED

2-157. Attached units are temporarily subordinated to the gaining HQ, and the periods may be lengthy, often months or longer. They return to their parent HQ (assigned or organic) when the reason for the attachment ends. The tank platoon may be attached to a variety of units. One example would be a tank platoon being attached to an Infantry company for a specific mission or a specified time period.

OPERATIONAL CONTROL

2-158. Operational control is inherent in combatant command (command authority) and may be delegated within the command. A tank platoon that is under operational control of a higher HQ can be reorganized as necessary to accomplish assigned task. However, as the platoon will operate no lower than the four-tank element, it is the responsibility of the platoon leader/*platoon commander* to inform the higher HQ to which they are attached of this constraint if they are not already aware.

TACTICAL CONTROL

2-159. Tactical control is inherent in operational control. The tank platoon that is under tactical control allows a higher HQ to apply force and direct the tactical use of the platoon, but it does not provide authority to change organizational structure or direct administrative and logistical support.

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Chapter 3

Offense

The main purpose of the offense is to defeat, destroy, or neutralize the enemy. The platoon also performs offensive tasks to deprive the enemy of resources, seize decisive terrain, deceive or divert the enemy, develop intelligence, or fix an enemy in position. Leaders within the tank platoon must understand the principles and TTP associated with the offense. They must comprehend their role when operating within a larger organization's operations and when operating independently. This chapter covers the basic principles of the offense, common offensive planning considerations, actions on contact, limited visibility, battlefield obscuration, and transitions.

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SECTION I – CONDUCT OF THE OFFENSE

3-1. The leader seizes, retains, and exploits the initiative when conducting offensive tasks. Even when conducting primarily defensive tasks, taking the initiative from the enemy requires offensive tasks that are force- or terrain-oriented. Force-oriented tasks focus on the enemy. Terrain-oriented tasks focus on seizing and retaining control of terrain and facilities. (Refer to FM 3-90-1 for more information.)

CHARACTERISTICS OF THE OFFENSE

3-2. The tank platoon gains and maintains the initiative, and keeps constant pressure on the enemy throughout its AO. Success in the offense greatly depends upon the proper application of the characteristics of the offense discussed in paragraphs 3-3 through 3-6.

AUDACITY

3-3. Audacity is a willingness to take bold risk. At the platoon-level, audacity is marked by violent initiative, defeating an enemy force in detail. It is a key component of all offensive actions, increasing the chance for surprise. Audacity depends upon the leader's ability to see opportunities for action, decide in enough time to seize opportunities, and accept prudent risks. Leaders understand when and where to take risks, plan, and execute boldly.

CONCENTRATION

3-4. Concentration is the massing of overwhelming effects of combat power to achieve a single purpose. Leaders balance the necessity for concentrating forces to mass effects against the need to disperse forces to avoid creating lucrative targets. The platoon leader/*platoon commander* must remember that it is more important to maneuver using covered and concealed routes to positions from which the platoon can mass fires and engage the enemy than it is to maintain precise formations and predetermined speeds. The tank platoon achieves concentration through—

- Careful planning and coordination based on a thorough terrain and enemy analysis, plus accurate reconnaissance.
- Designation of a main effort and allocation of resources to support it.
- Continuous information flow.
- Massing firepower using organic fires and maneuver.

SURPRISE

3-5. In the offense, surprise is achieved by attacking the enemy at a time or place they do not expect or in a manner for which they are unprepared. The tank platoon achieves surprise by—

- Conducting thorough reconnaissance.
- Maintaining effective security, including counter-reconnaissance.
- Using terrain to advantage.
- Transitioning from movement to maneuver effectively.
- Mastering TLP, fundamental actions, and drills that allow the platoon to act quicker than an adversary expects.

TEMPO

3-6. **Tempo** is the relative speed and rhythm of military operations over time with respect to the enemy (ADRP 3-0). Controlling or altering tempo is necessary to retain

the initiative. A faster tempo allows attackers to quickly penetrate obstacles and defenses, and destroy enemy forces in-depth before they can react. While a fast tempo is preferred, the platoon leader/*platoon commander* must remember that synchronization with the company team movement sets the stage for successful platoon operations. Rapid tempo demands quick decisions. It denies the enemy the chance to rest while continually creating offensive opportunities.

OFFENSIVE TASK

3-7. The four offensive tasks are movement to contact, attack, exploitation, and pursuit. Each is explained in paragraphs 3-8 through 3-11 on page 3-4.

MOVEMENT TO CONTACT

3-8. **Movement to contact** is an offensive task designed to develop the situation and to establish or regain contact (ADP 3-90.) It creates favorable conditions for subsequent tactical actions. The platoon leader/*platoon commander* conducts a movement to contact when the enemy situation is vague or not specific enough to conduct an attack. Forces executing this task seek to make contact using the smallest friendly force possible. A movement to contact may result in a meeting engagement, which is a combat action occurring when a moving force engages an enemy at an unexpected time and place. Once making contact with an enemy force, the leader has five options: attack, defend, bypass, delay, or withdraw. Two movement to contact techniques are search and attack, and cordon and search.

ATTACK

3-9. An **attack** is an offensive task that destroys or defeats enemy forces, seizes and secures terrain, or both (ADP 3-90). An attack differs from a movement to contact because enemy main body dispositions are at least partially known, allowing the leader to achieve greater synchronization. Attacks incorporate coordinated movement supported by direct and indirect fires. They may be decisive or shaping operations and hasty or deliberate, depending upon the time available for assessing the situation, planning, and preparing. However, based on METT-TC, the leader may decide to conduct an attack using only fires.

EXPLOITATION

3-10. **Exploitation** follows a successful attack and disorganizes the enemy in-depth (ADP 3-90). Exploitations seek to disintegrate enemy forces to the point where they have no alternative but surrender or retreat. Exploitations take advantage of tactical opportunities, foreseen or unforeseen. Division and higher HQ normally plan exploitations as branches or sequels to plans. However, the tank platoon may participate as part of the fixing force or striking force.

PURSUIT

3-11. A **pursuit** is an offensive task designed to catch or cut off a hostile force attempting to escape, with the aim of destroying it (ADP 3-90). A pursuit normally follows exploitation. Transition into a pursuit can occur if it is apparent enemy resistance has broken down entirely and the enemy is fleeing the AO. Pursuits entail rapid movement, decentralized control and clear commanders' intent to facilitate control. Like an exploitation, the tank platoon conducts a pursuit as part of a larger formation.

FORMS OF MANEUVER

3-12. Leaders select the form of maneuver, based on METT-TC, and synchronize the contributions of all warfighting functions to that form of maneuver. An operation may contain several forms of offensive maneuver, such as frontal attack to clear enemy security forces, followed by a penetration to create a gap in enemy defenses, which in turn is followed by an envelopment to destroy a counterattacking force. While tank platoons do not have the combat power to conduct all forms of maneuver on its own, they can participate as part of a larger formation. The six forms of maneuver are—

- Envelopment.
- Turning movement.
- Frontal attack.
- Penetration.
- Infiltration.
- Flank attack.

ENVELOPMENT

3-13. **Envelopment** is a form of maneuver in which an attacking force seeks to avoid the principal enemy defenses by seizing objectives behind those defenses that allow the targeted enemy force to be destroyed in their current positions (FM 3-90-1). The four varieties of envelopment are single envelopment, double envelopment, encirclement, and vertical envelopment.

TURNING MOVEMENT

3-14. A turning movement is a form of maneuver in which the attacking force seeks to avoid the enemy's principle defensive positions by seizing objectives behind the enemy's current position. A turning movement seeks to make the enemy force displace from their current locations, whereas an enveloping force seeks to engage the enemy in their current locations from an unexpected direction.

FRONTAL ATTACK

3-15. A **frontal attack** is a form of maneuver in which an attacking force seeks to destroy a weaker enemy force or fix a larger enemy force in place over a broad front (FM 3-90-1). An attacking force can use a frontal attack to overrun a weak enemy force.

PENETRATION

3-16. A **penetration** is a form of maneuver in which an attacking force seeks to rupture enemy defenses on a narrow front to disrupt the defensive system (FM 3-90-1). Destroying the continuity of that defense allows for the enemy's subsequent isolation and defeat in detail by exploiting friendly forces.

INFILTRATION

3-17. An **infiltration** is a form of maneuver in which an attacking force conducts undetected movement through or into an area occupied by enemy forces to occupy a position of advantage behind those enemy positions while exposing only small elements to enemy defensive fires (FM 3-90-1). While tank platoons rarely conduct infiltrations, the platoon can perform overwatch or support by fire during the execution.

FLANK ATTACK

3-18. A **flank attack** is a form of offensive maneuver directed at the flank of an enemy (FM 3-90-1). A flank is the right or left side of a military formation and is not oriented toward the front of the enemy.

COMMON OFFENSIVE CONTROL MEASURES

3-19. The higher commander defines the commander's intent and establishes control measures allowing for decentralized execution and platoon leader/*platoon commander* initiative to the greatest extent (refer to ADP 3-90 for more information). Common control measures for the offense are the—

- Assault position. This is the last covered and concealed position short of the objective from which the tank platoon conduct final preparations to assault the objective (see figure 3-1).



Figure 3-1. Assault position

- Assault time. Is imposed by the higher HQ and synchronizes the moment the enemy feels the effect of the tank platoon.

- Attack-by-fire position. Designates a general position from which the tank platoon conducts the tactical task of attack by fire (see figure 3-2).

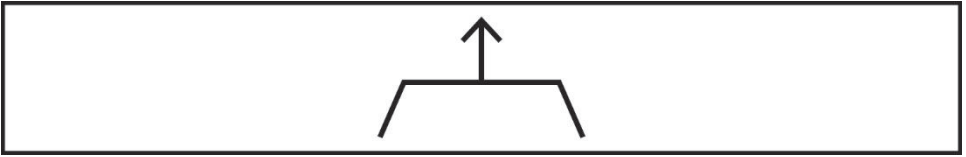


Figure 3-2. Attack-by-fire position

- Attack position. The last position a tank platoon occupies or passes through before crossing the LD. It facilitates the deployment and last-minute coordination of the platoon before it crosses the LD (see figure 3-3).

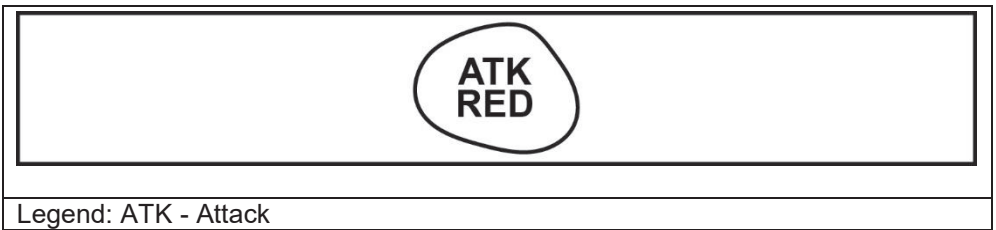


Figure 3-3. Attack position

- Axis of advance. The general area (route) through which the platoon must move (see figure 3-4).



Figure 3-4. Axis of advance

- Battle handover line (BHL). Is a PL where responsibility transitions from the stationary force to the moving force and vice versa (see figure 3-5).

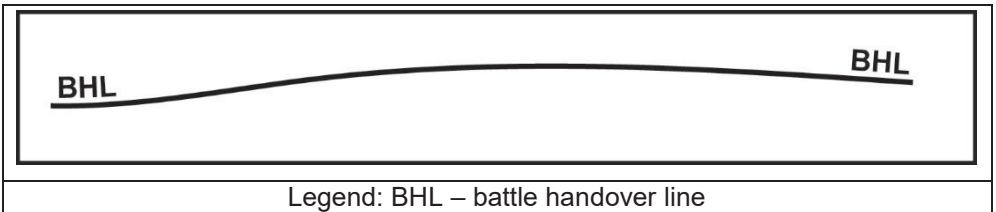


Figure 3-5. Battle handover line

- **Checkpoint.** A predetermined point on the ground used to control movement, tactical maneuver, and orientation (ATP 3-50.20). Checkpoints are useful for orientation. Units may use checkpoints as substitutes for PLs (see figure 3-6).

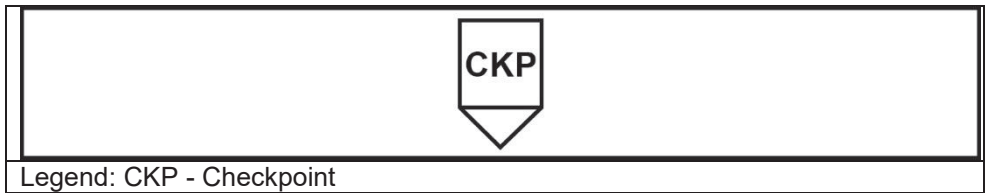


Figure 3-6. Checkpoint

- **Direction of attack.** A specific direction or assigned route a platoon uses and does not deviate from when attacking (see figure 3-7).



Figure 3-7. Direction of attack

- **Final coordination line.** A PL that is close to the enemy positions and is used to coordinate the lifting or shifting of supporting fires with the final deployment of maneuver elements (see figure 3-8).

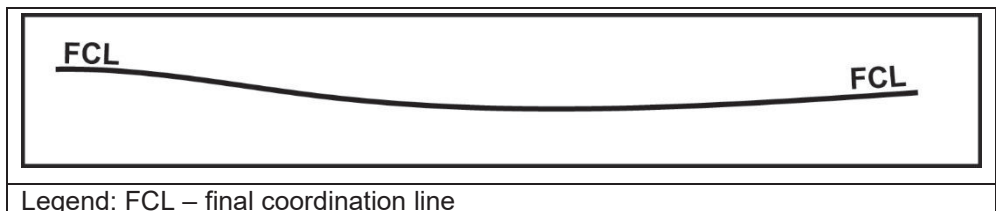


Figure 3-8. Final coordination line

- Limit of advance (LOA). A PL that is used to control the forward progress of an attack (see figure 3-9).

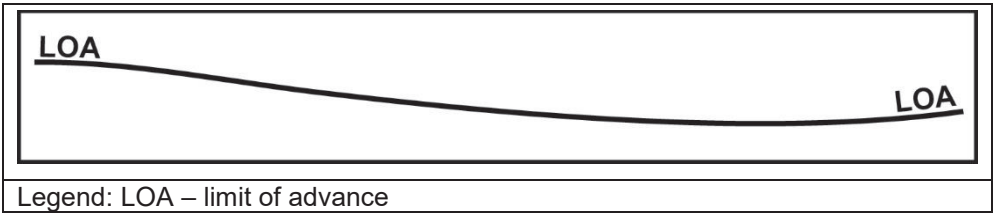


Figure 3-9. Limit of advance

- LD. A PL that is crossed at a prescribed time by the platoon when conducting offensive tasks (see figure 3-10).

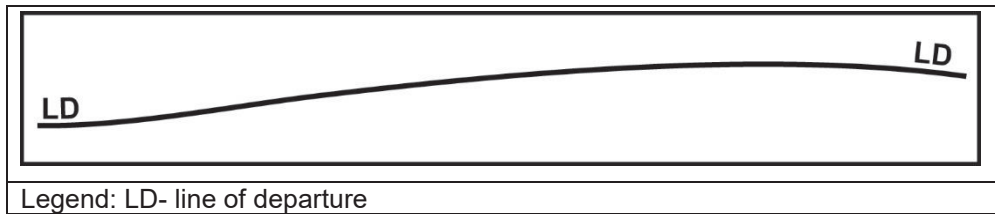


Figure 3-10. Line of departure

- Objective. Is a location on the ground used to orient operations, phase operations, facilitate changes of direction, and provide for unity of effort. It can be either terrain or force oriented (see figure 3-11).

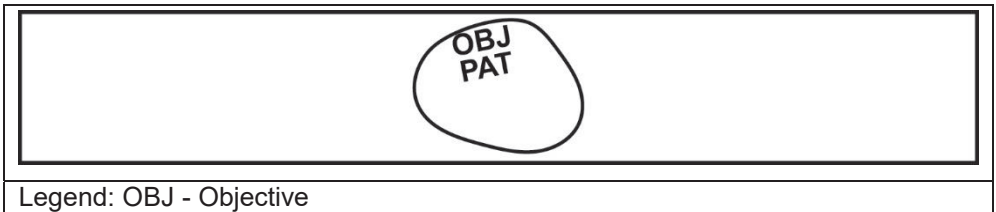


Figure 3-11. Objective

- Point of departure. Is a point where the platoon crosses the LD and begins movement along the direction of attack (see figure 3-12).

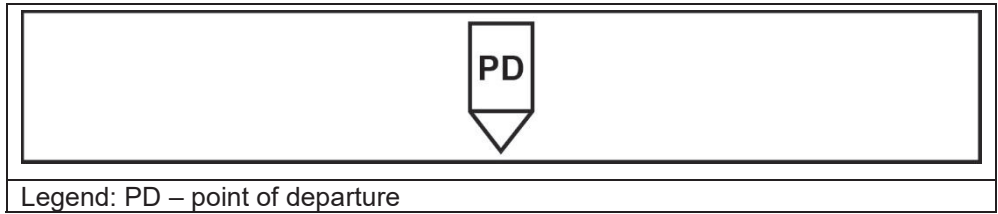


Figure 3-12. Point of departure

- Probable line of deployment. A PL that designates the location where the leader intends to deploy the platoon into assault formation before beginning the assault (see figure 3-13).

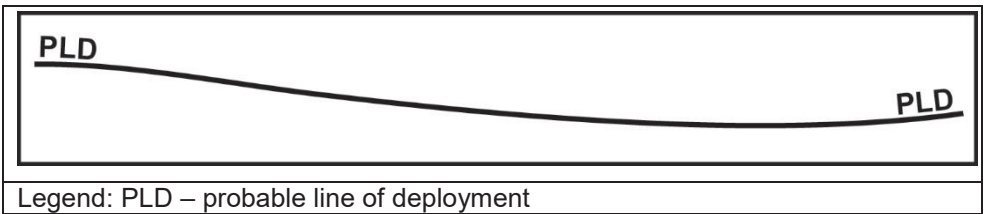


Figure 3-13. Probable line of deployment

- Rally point. Is an easily identifiable point on the ground at which units can reassemble and reorganize if they become dispersed (see figure 3-14).

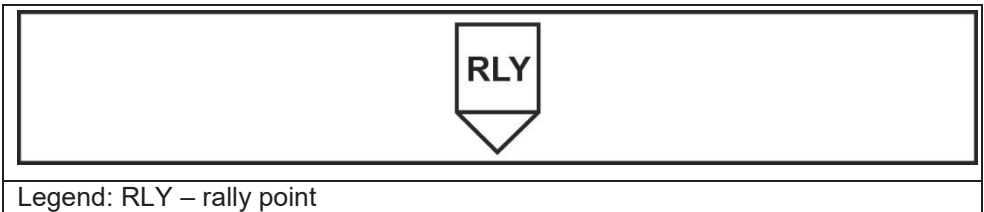


Figure 3-14. Rally point

- Support-by-fire position. Designates the general position from which the platoon conducts the tactical mission task of support by fire (see figure 3-15).



Figure 3-15. Support-by-fire position

- Time of attack. Is the time when the leading elements cross the LD.

3-20. Figure 3-16 is an example maneuver graphic that integrates all the offensive control measures listed in figures 3-1 through 3-15 on pages 3-5 through 3-9. It depicts a company team conducting an attack into objective Pat crossing multiple PLs.

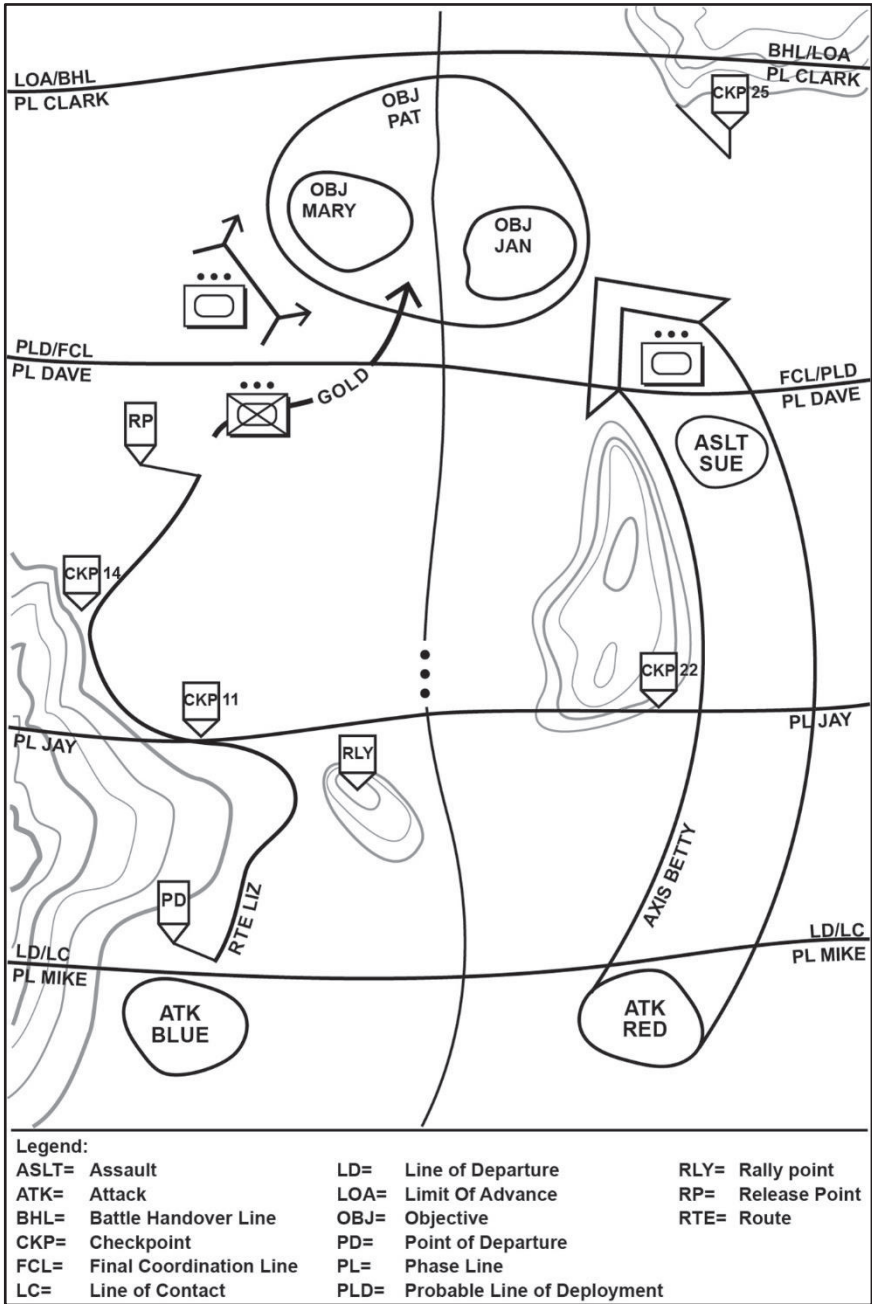


Figure 3-16. Example of offensive control measures

3-21. An AO defines the location where the subordinate units conduct their offensive task. One technique breaks the battalion and company AO into many named smaller AO. Units remain in designated AO as they conduct their missions. Battalion and higher reconnaissance assets might be used to observe AO with no platoons in them, while platoons or companies provide their own reconnaissance in the AO. This technique, along with TRPs, help avoid fratricide in noncontiguous environments. A TRP facilitates the responsiveness of fixing and finishing elements once the reconnaissance element detects the enemy. Objectives and checkpoints guide the movement of subordinates and help leaders control their organizations. Contact points help coordination among units operating in adjacent areas.

3-22. When looking for terrain features to use as control measures, leaders consider three types: contiguous; point; and area. Contiguous features follow major natural and manmade features such as ridgelines, valleys, trails, streams, power lines, and streets. Point features can be identified by a specific feature or a grid coordinate including, hilltops and prominent buildings. Area features are significantly larger than point features and require a combination of grid coordinates and terrain orientation.

SECTION II – COMMON OFFENSIVE PLANNING CONSIDERATIONS

3-23. The planning phase begins when the platoon receives the higher WARNORD or OPORD and ends when the platoon leader/*platoon commander* issues an OPORD. After the WARNORD is issued, the leader initiates rehearsals of tactical movement, battle drills, or tasks. These generic rehearsals allow the platoon to begin preparing for the mission. Once the platoon leader/*platoon commander* completes the plan, the generic rehearsals are matched to the actual terrain and anticipated actions on enemy contact. In developing the OPORD, the platoon leader/*platoon commander* pays close attention to the following considerations applicable to the warfighting functions.

3-24. The warfighting functions are critical tactical activities that leaders can use to plan, prepare, and execute. Synchronization and coordination among the warfighting functions are critical for success. This section discusses warfighting functions and other planning consideration. (Refer to MCWP 5-10 for further information on Marine Corps warfighting functions consideration.)

MISSION COMMAND/*COMMAND AND CONTROL*

3-25. The platoon leader's/*platoon commander's* key function is conducting TLP. Immediately after the company order is issued or during the company rehearsal, the platoon leader/*platoon commander* coordinates unresolved issues with the other leaders, the XO, and the company commander. The coordination should specify routes, intervals, movement speed, orientations, fire control measures, and signals between platoons. Mission command invokes the greatest possible freedom of action to the subordinates, facilitating their abilities to develop the situation, adapt, and act decisively through disciplined initiative within the platoon leader's/*platoon commander's* assigned task and

purpose. It focuses on empowering subordinate leaders and sharing information to facilitate decentralized execution.

3-26. Mission command conveys the leader's intent, and an appreciation of METT-TC, with special emphasis on—

- Enemy positions, strengths, and capabilities.
- Missions and objectives, including task and purpose, for each subordinate element.
- Commander's intent.
- Areas of operations for use of each subordinate element with associated control graphics.
- Time the operation is to begin.
- Scheme of maneuver.
- Special tasks required to accomplish the mission.
- Risk.
- Options for accomplishing the mission.

TACTICAL MISSION TASKS

3-27. Tactical mission tasks describe the results or effects the commander wants to achieve—the what and why of a mission statement. The “what” is an effect that is normally measurable. The “why” of a mission statement provides the mission's purpose. These tasks may be expressed in terms of either actions by friendly force or effects on the enemy.

3-28. Paragraphs 3-29 through 3-33 on page 3-14 are select tactical mission tasks that the platoon may receive and are typically associated with offensive tasks. Each is described below.

Note. The situations used in this section are examples only. For the complete list, refer to FM 3-90-1. They are not applicable in every tactical operation, nor intended to prescribe any specific method for achieving the purpose of the operation.

BREACH

3-29. A **breach** is a synchronized combined arms activity under the control of the maneuver commander conducted to allow maneuver through an obstacle (ATP 3-90.4/MCWP 3-17.8). There are three types of breaches: deliberate, hasty, and covert. A platoon may conduct a breach as the assault, breach, or support element of a company attack to break through or secure a passage through an enemy defense, obstacle, minefield, or fortification. A platoon can participate in a hasty breach or participate as part of a larger unit during the conduct of a deliberate breach.

DEFEAT

3-30. A platoon defeats an enemy force when the enemy force has temporarily or permanently lost the physical means or the will to fight. A defeat is complete when the defeated force's leader is unwilling or unable to pursue the adopted COA, thereby yielding to the friendly commander's will. Also, the defeated force's leader can no longer interfere with the actions of friendly forces to a significant degree.

DESTROY

3-31. A platoon destroys an enemy force when it physically renders an enemy force combat-ineffective until it is reconstituted. A platoon can destroy an enemy force by—

- Executing an ambush where the entire enemy element is in the kill zone.
- Using direct and indirect fire into an EA.
- Coordinating direct and indirect fires onto an objective.
- Massing indirect fires onto an unprepared enemy.

SEIZE

3-32. A platoon has seized an objective when it physically occupies it and the enemy can no longer place direct fire on it. A platoon may seize during either offensive or defensive tasks. Examples include:

- The platoon seizes the far side of an obstacle as part of a company team breach.
- The platoon seizes a portion of an enemy defense as part of a company team deliberate attack.
- The platoon seizes key terrain to prevent its use by the enemy.

SUPPRESS

3-33. The platoon has suppressed an enemy when the enemy cannot prevent friendly forces from accomplishing their mission. It is a temporary measure. The platoon can use direct or indirect fire and obscuring fires. Units in support and attack-by-fire positions often use suppressive fires to accomplish their mission. It is often used by the platoon during an attack to—

- Allow further movement of friendly forces.
- Isolate an objective by suppressing enemy units in mutually supporting positions.
- Cover the assault element from the LD to the objective.

MOVEMENT AND MANEUVER/*MANEUVER*

3-34. The platoon leader/*platoon commander* develops the platoon maneuver plan so that it matches the commander's intent and specific instructions and supports the company main effort. The platoon leader/*platoon commander* determines the platoon's route, movement technique, and formation based on the terrain, the company scheme of

maneuver, and the likelihood of enemy contact. The platoon leader/*platoon commander* pays particular attention to fields of observation and fire; these factors can help to define potential enemy EAs. The platoon leader/*platoon commander* war-games anticipated actions on contact and execution of essential tasks. The platoon leader/*platoon commander* also addresses actions on the objective.

3-35. The platoon leader/*platoon commander* identifies attack-by-fire and support-by-fire positions from which the platoon can engage known or suspected enemy positions. The platoon leader/*platoon commander* designates TRPs and assigns sectors of fire, observation, and weapons orientation. The platoon leader/*platoon commander* specifies platoon fire patterns (if different from those identified by SOP) and addresses restrictions on direct fire imposed by the ROE in effect for the operation.

3-36. The movement and maneuver/*maneuver* warfighting function includes the following tasks:

- Deploy.
- Move.
- Maneuver.
- Employ direct fires.
- Occupy an area.
- Conduct mobility and countermobility operations.
- Conduct reconnaissance and surveillance.
- Employ battlefield obscuration.

INTELLIGENCE

3-37. Most analysis of the enemy situation and probable COA is done at the battalion- and company-level; however, it is the platoon leader's/*platoon commander's* responsibility to understand how the enemy's disposition and possible COA may affect the platoon's AO and the accomplishment of its mission. The platoon leader/*platoon commander* identifies and plots on overlays all known and suspected enemy positions that affect the platoon's AO and identifies indirect and direct fire range fans of enemy weapon systems.

FIRES

3-38. The platoon leader/*platoon commander* must have a good indirect fire plan for the route to cover anticipated places of contact. These targets are a product of the platoon leader's/*platoon commander's* analysis of the factors of METT-TC and must be incorporated into the company's indirect fire plan.

3-39. A clearly defined concept of the operation enables the platoon leader/*platoon commander* to articulate precisely how they want indirect fires to affect the enemy during the different phases of the operation. In turn, this allows the company fire support officer/*fire support team (FIST) leader* to facilitate the development of fires supporting accomplishment of the company's mission down to the platoon-level. (Refer to ADRP 3-09 for more information.)

SUSTAINMENT/LOGISTICS

3-40. A key to successful offense is the ability to anticipate the requirement to push support forward, specifically about ammunition and fuel. In regards to ammunition, enemy composition must be factored when determining the type and number of rounds. During offensive operations, platoon leader/*platoon commander* and platoon sergeant must plan for a higher rate of fuel consumption. The platoon leader/*platoon commander* or platoon sergeant ensures that the tank crews are familiar with procedures for maintenance and medical treatment and evacuation. The platoon sergeant consolidates logistics and resupply needs of the platoon and reports those needs to the XO or *1SG/tank leader*.

PROTECTION/FORCE PROTECTION

3-41. Denying the enemy a chance to plan, prepare, and execute a response to the friendly offense by maintaining a high operational tempo is a vital means the leader employs to ensure the survivability of the force. Using multiple routes, dispersion, highly mobile forces, piecemeal destruction of isolated enemy forces, scheduled rotation and relief of forces before they culminate, and wise use of terrain are techniques for maintaining a high tempo of offense.

3-42. In the offense, survivability operations enhance the ability to avoid or withstand hostile actions by altering the physical environment. Vehicle camouflage and route concealment typically play a greater role in survivability during offensive tasks than the other survivability operations. The use of terrain provides a measure of protection during halts in the advance. Depending on the threat, primary protection concerns of the commander may be enemy air (see chapter 8), including UAS and CBRN threats (see appendix B). If these threats exist, the commander prepares the unit and adjusts the scheme of maneuver accordingly. In the face of an enemy air threat, the unit usually has only passive and active (with its organic weapons) air defenses.

3-43. The leader protects subordinate forces to deny the enemy the capability to interfere with their ongoing operations. Protection also meets the leader's legal and moral obligations to the organization's Service members. Some protection assets may need to be requested from higher. (Refer to ADP 3-37 for more information.) To help preserve the force, the leader constantly assesses and ensures the following doctrinal protection tasks are addressed during the platoon's planning, preparation, and execution:

- Conduct operational area security.
- Conduct risk management.
- Conduct force health protection.
- Conduct personnel recovery.
- Conduct antiterrorism.
- Conduct detention operations (detainee).
- Implement physical security procedures.
- Conduct survivability operations.
- Conduct CBRN operations.

- Provide support for explosive ordnance disposal.
- Coordinate air and missile defense.

URBAN PLANNING CONSIDERATIONS

3-44. Offensive missions in an urban environment aim to destroy, defeat, or neutralize an enemy force. However, the purpose may be to achieve some effect relating to the population or infrastructure of the urban area. Leaders should use a combined arms approach for offensive urban operations.

3-45. The tank platoon may provide support by fire while other maneuver elements seize a foothold. The platoon then can provide overwatch or serve as a base of fire for the Infantry until the area has been secured. In house-to-house and street fighting, tanks move down the streets protected by the Infantry, which clears the area of enemy AT guided missile weapons. (Refer to ATP 3-21.8 and ATP 3-06 for more information.)

3-46. Urban terrain imposes a number of demands different from ordinary field conditions, such as problems with troop requirements, maneuver, and use of equipment. As with all offensive missions, the leader must retain the ability to maneuver against enemy positions. See appendix A for more information on the limitations for direct fire control in an urban area.

SECTION III – PREPARATION

3-47. The preparation phase ends when the platoon crosses the LD and deploys for the attack. The platoon leader/*platoon commander* takes into account the following warfighting function considerations.

MISSION COMMAND/COMMAND AND CONTROL

3-48. During the preparation phase, the platoon leader/*platoon commander* continues with TLP and conducts rehearsals and inspections to ensure the platoon is ready for the upcoming operation. Near the end of the phase, the platoon leader/*platoon commander* conducts a PCI of tank crews and equipment (see chapter 2 for more information).

MOVEMENT AND MANEUVER/MANEUVER

3-49. Following the last company rehearsal, the platoon should conduct a final rehearsal of its own to incorporate any adjustments to the company scheme of maneuver. The platoon rehearsal should cover the following subjects:

- Movement from current positions.
- Routes.
- Platoon and company formations and movement techniques.
- Vehicle positions in the platoon formation.
- Weapons orientation and fire control.
- Decision points.

- Actions on contact.
- Actions on the objective (consolidation and reorganization.)
- Reporting procedures.
- Signals.

INTELLIGENCE

3-50. During this phase, the platoon leader/*platoon commander* receives updated SPOTREPs listing known and suspected enemy locations as well as the latest friendly actions. The platoon leader/*platoon commander* plots the updated enemy and friendly locations on the overlay and on the enemy overlay (digital systems); based on terrain reconnaissance, the platoon leader/*platoon commander* adjusts the maneuver plan accordingly.

FIRES

3-51. During the rehearsal, the platoon leader/*platoon commander* addresses responsibility for targets in the platoon AO. The platoon leader/*platoon commander* covers any scheduled indirect fires and the effects of smoke on the battlefield. In addition, the platoon leader/*platoon commander* discusses the direct fire plan, with emphasis on platoon responsibilities, known and suspected enemy locations, friendly unit locations, and applicable ROE.

SUSTAINMENT/LOGISTICS

3-52. During the preparation phase, tank crews conduct resupply operations to replenish their combat loads. They also perform preventive maintenance checks and services (PMCS) on their vehicles and equipment.

3-53. Rehearsals cover aspects of the sustainment/*logistical* plan that support the upcoming operation, including emergency resupply and personnel and vehicle evacuation procedures. For more information on logistics, refer to chapter 6.

SECTION IV – FORMATIONS AND MOVEMENT TECHNIQUES

3-54. The formations and weapons orientations shown in illustrations in this section are examples only; they generally are depicted without consideration of terrain and other METT-TC factors that are always the most crucial element in the selection and execution of a formation. Leaders must be prepared to adapt their choice of formation to the specific situation.

COMBAT FORMATIONS

3-55. A **combat formation** is an ordered arrangement of forces for a specific purpose and the general configuration of a unit on the ground (ADP 3-90). There are seven different combat formations: column, line, echelon (left or right), wedge, vee, box, and

diamond. The tank platoon normally only uses the first five of the seven formations. Terrain characteristics and visibility determine the actual arrangement and location of the unit's personnel and vehicles in a given formation. Formations are not intended to be rigid, with vehicles remaining a specific distance apart at every moment. Formations allow units to give the orient their firepower based upon the direction of anticipated enemy contact.

3-56. The platoon leader/*platoon commander* uses these formations for several purposes: to relate one section to another; to position firepower to support the direct-fire plan; to establish responsibilities for AO security; or to aid in the execution of battle drills. Just as the platoon leader/*platoon commander* does with movement techniques, the platoon leader/*platoon commander* plans formations based on where to expect enemy contact, and on the company commander's plans to react to contact. The platoon leader/*platoon commander* evaluates the situation and decides which formation best suits the mission and situation.

3-57. Sometimes platoon and company formations differ due to METT-TC. For example, the platoons could move in wedge formations in a company vee. It is not necessary for platoon formations to be the same as the company formation unless directed by the company commander. However, the platoon leader/*platoon commander* coordinates the formation with other elements moving in the main body team's formation.

COLUMN

3-58. The platoon uses the column when moving fast, when moving through restricted terrain on a specific route, or when it does not expect enemy contact. Each vehicle normally follows directly behind the vehicle in front of it. However, if the situation dictates, vehicles can disperse laterally to enhance security. This is sometimes referred to as a staggered column (see figure 3-17).

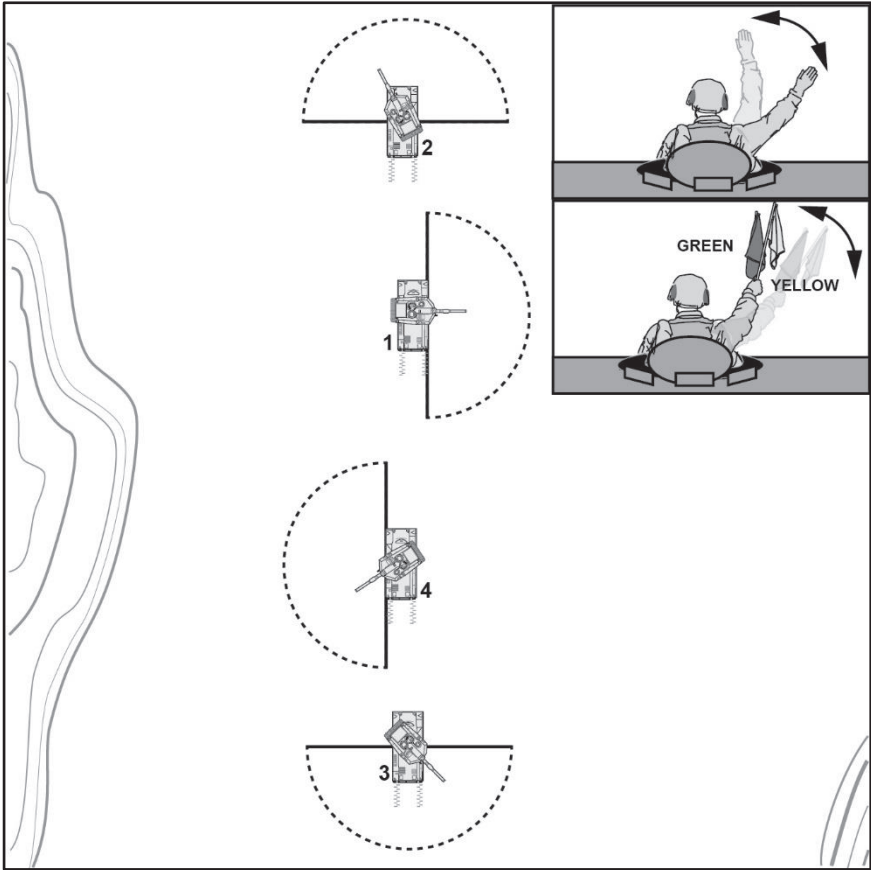


Figure 3-17. Column

STAGGERED COLUMN

3-59. The staggered column formation is a modified column formation with one section leading, and one section trailing to provide overwatch. The staggered column permits good fire to the front and flanks. It is used when speed is critical, when there is a limited area for lateral dispersion, or when enemy contact is possible (see figure 3-18).

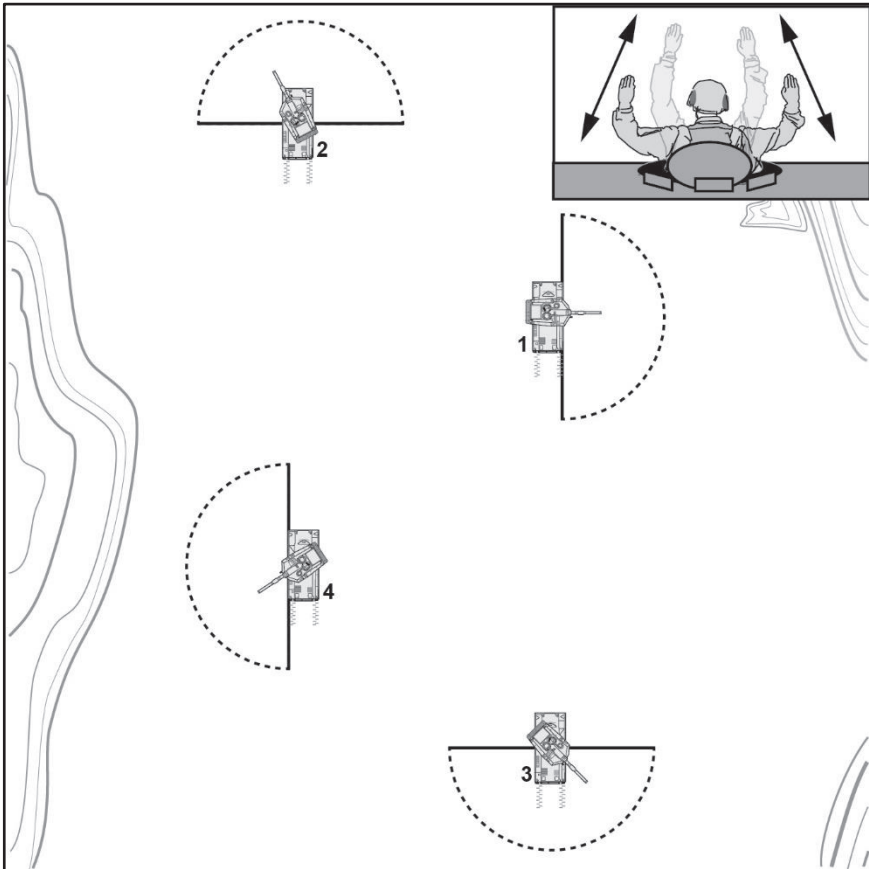


Figure 3-18. Staggered column

WEDGE

3-60. The wedge formation permits excellent firepower to the front and good fire to each flank. The platoon leader/*platoon commander* can easily control all vehicles and deploy rapidly into other formations. The wedge formation is often used when the enemy situation is vague. The orientation of the sections is left and right. The platoon leader/*platoon commander* and platoon sergeant control the other vehicle (wingman) of their section by directing it to follow to the outside and to orient its weapons toward the flanks (see figure 3-19).

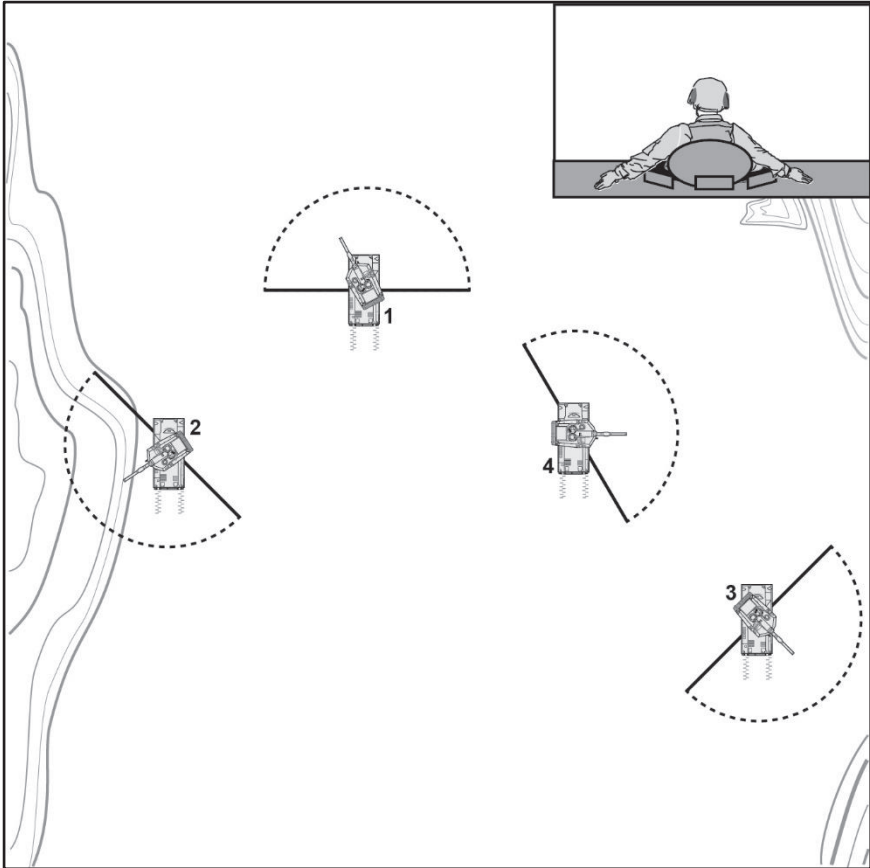


Figure 3-19. Wedge

ECHELON

3-61. When the company team wants to maintain security or observation of one flank, the platoon uses the echelon formation. The echelon formation permits excellent firepower to the front and to one flank. It is used to screen an exposed flank of the platoon or of a larger moving force (see figure 3-20).

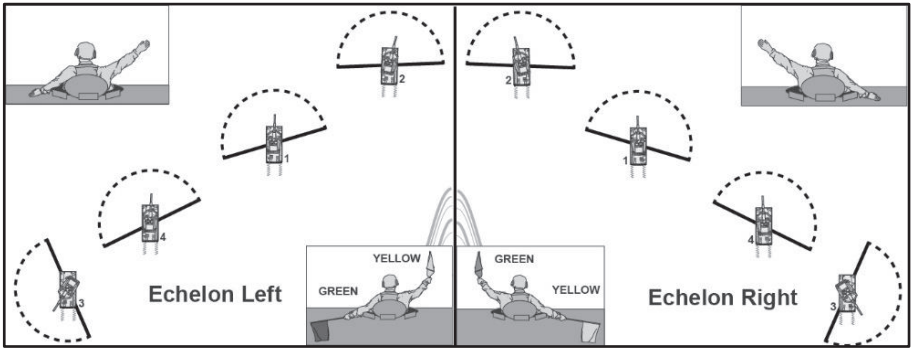


Figure 3-20. Echelon

VEE

3-62. The vee formation provides excellent protection and control, but limits fires to the front. This formation is used when terrain restricts movement or when overwatch within the platoon is required (see figure 3-21).

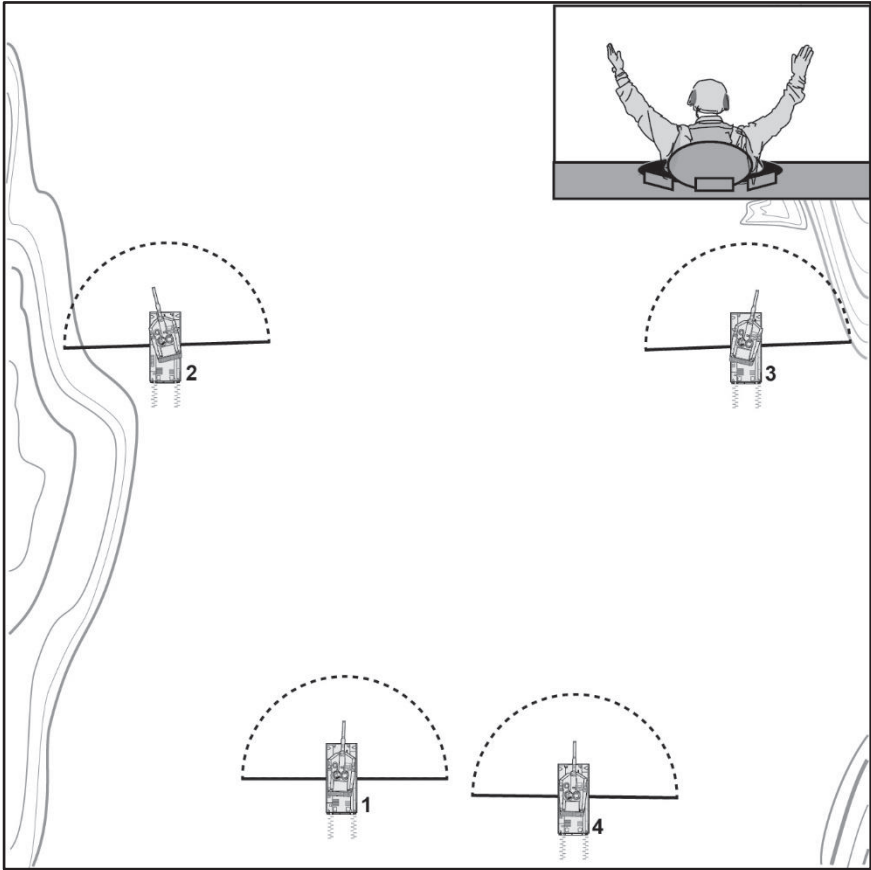


Figure 3-21. Vee

LINE

3-63. When assaulting a weakly defended objective, crossing open areas, or occupying a support-by-fire position, the platoon uses the line formation. The platoon can use the line formation in the assault to maximize the platoon's firepower. The line formation provides maximum firepower forward. It is used when the platoon crosses danger areas and is provided with overwatch by another element or when the platoon assaults enemy positions (see figure 3-22).

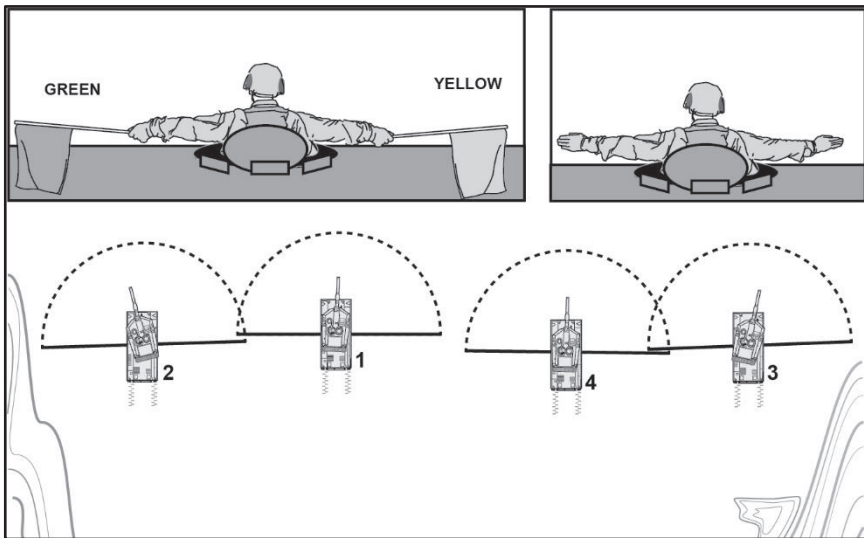


Figure 3-22. Line

COIL

3-64. The platoon uses the coil formation to establish a perimeter defense during extended halts, or lulls in combat, when it is operating independently. The lead vehicle halts the vehicle in the direction of travel (12 o'clock) while the other vehicles position themselves to form a circular formation covering all suspected enemy avenues of approach (see figure 3-23).

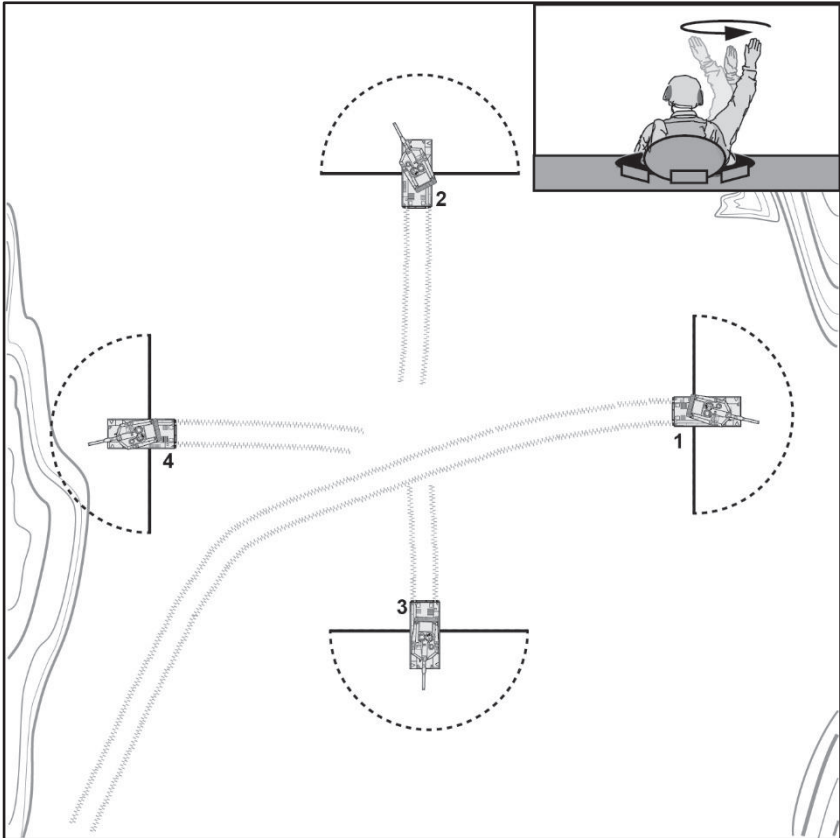


Figure 3-23. Coil

HERRINGBONE

3-65. The platoon uses the herringbone formation when it must assume a hasty defense with 360-degree security. This formation allows the platoon to remain ready to continue movement in its original direction of travel. If terrain permits, vehicles should move off the road and stop at a 45-degree angle, allowing passage of vehicles through the center of the formation. Normally, platoons employ the herringbone formation during scheduled or unscheduled halts in a road march (see figure 3-24).

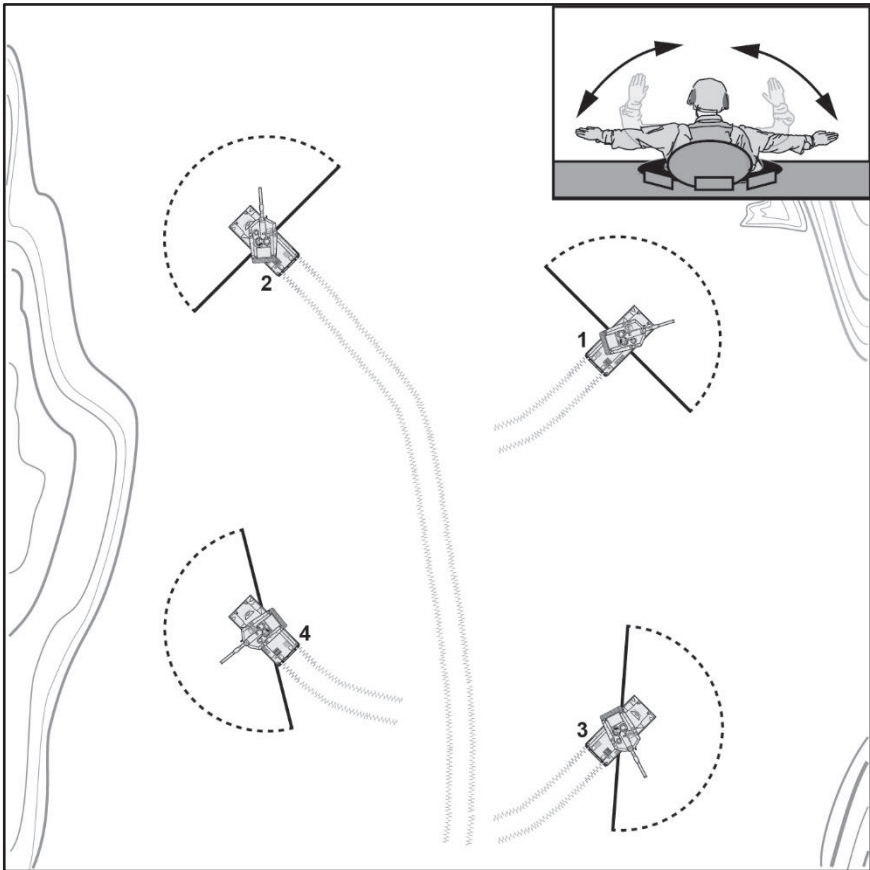


Figure 3-24. Herringbone

3-66. The coil and herringbone are platoon-level formations employed when elements are stationary and must maintain 360-degree security.

3-67. The platoon leader/*platoon commander* tracks the platoon's formation and movement in conjunction with the company's formation.

3-68. The transition from movement to maneuver occurs in the presence of, or expected contact with, the enemy. A probable line of deployment is the graphic control measure that depicts anticipated transition from movement to maneuver.

MOVEMENT TECHNIQUES

3-69. Movement techniques are not fixed formations. They refer to the distances between tanks based on mission, enemy, terrain, visibility, speed, and other factors affecting control. They limit the platoon's exposure to enemy fire and position it in a good formation to react to enemy contact. There are three movement techniques: traveling, traveling overwatch, and bounding overwatch. Factors to consider for each technique are control, ability to maneuver, dispersion, speed, and security.

TRAVELING

3-70. The platoon uses the traveling movement technique when speed is necessary and contact with enemy forces is not likely. All elements of the platoon move simultaneously. The platoon leader/*platoon commander* is located where they can best control the movement. When using the traveling movement technique, intervals between tanks is based on visibility, terrain, and weapon ranges.

TRAVELING OVERWATCH

3-71. The platoon uses the traveling overwatch movement technique when contact with enemy forces is possible, but speed is important. The lead section is continuously moving, while the trailing section moves at variable speeds, sometime pausing to overwatch the movement of the lead section. The trailing section keys its movement to the terrain, overwatching from a position where they can support the lead section if it engages the enemy. The trailing section overwatches from positions and at distances that will not prevent them from firing or moving to support the lead section.

Overwatch

3-72. Overwatch is a technique in which an element observes and provides direct fire support for a friendly moving element. Situational understanding is a crucial factor in all overwatch missions, whose objective is to prevent the enemy from surprising and engaging the moving unit. The overwatch force must maintain communications with the moving force and provide early warning of enemy elements that could affect the moving force. It also scans gaps and dead space within the moving element's formations.

3-73. If the overwatch is unable to scan dead space and engage the enemy, it must alert the moving element of the lapse in coverage. The overwatch must also be able to support the moving force with immediate direct and indirect fires. The overwatch element can be either stationary or on the move.

Overwatch on the Move

3-74. The trail section or platoon maintains a designated location in the formation. It continuously scans the lead element's AO, closely monitoring gaps and dead space. The trail element maintains an interval dictated by the capabilities of its weapon systems and the effects of terrain. As needed, it can execute a short halt on key terrain to provide more effective overwatch.

BOUNDING OVERWATCH

3-75. The platoon uses the bounding overwatch movement technique when contact with enemy forces is expected. There are two variations of this technique: alternate bounds and successive bounds. In both cases, the overwatching section covers the bounding section from covered and concealed positions with good observations and fields of fire against possible enemy positions. They can immediately support the bounding section with maneuver or fires, if the bounding section makes contact. Unless they make contact en route, the bounding section moves via covered and concealed routes into the next set of support-by-fire positions. The length of the bound is based on the terrain and range of overwatching weapon systems. In bounding overwatch, all movement keys on the next support-by-fire position, which must offer, cover and concealment, good observation and fields of fire, and protection.

Stationary Overwatch

3-76. The section or platoon occupies hull-down firing positions that provide effective cover and concealment, unobstructed observation, and clear fields of fire. The section or platoon leader/*platoon commander* assigns sectors of fire. Individual crews aggressively scan their sectors using applicable search techniques to identify enemy positions. The overwatch element scans, paying close attention to gaps and dead space. If contact is made, the overwatch element initiates a high volume of direct or indirect suppressive fires; it moves as necessary between primary and alternate positions to avoid being decisively engaged.

Alternate Bounds

3-77. If the platoon uses alternate bounds, the lead section moves forward, halts, and occupies a support-by-fire position covered at all times by the rear overwatching section. The former rear overwatching section advances past the former lead section and takes up overwatch positions. The initial lead section then advances past the initial trail section and occupies a new support-by-fire position. One section moves at a time. This method is usually more rapid than successive bounds (see figure 3-25).

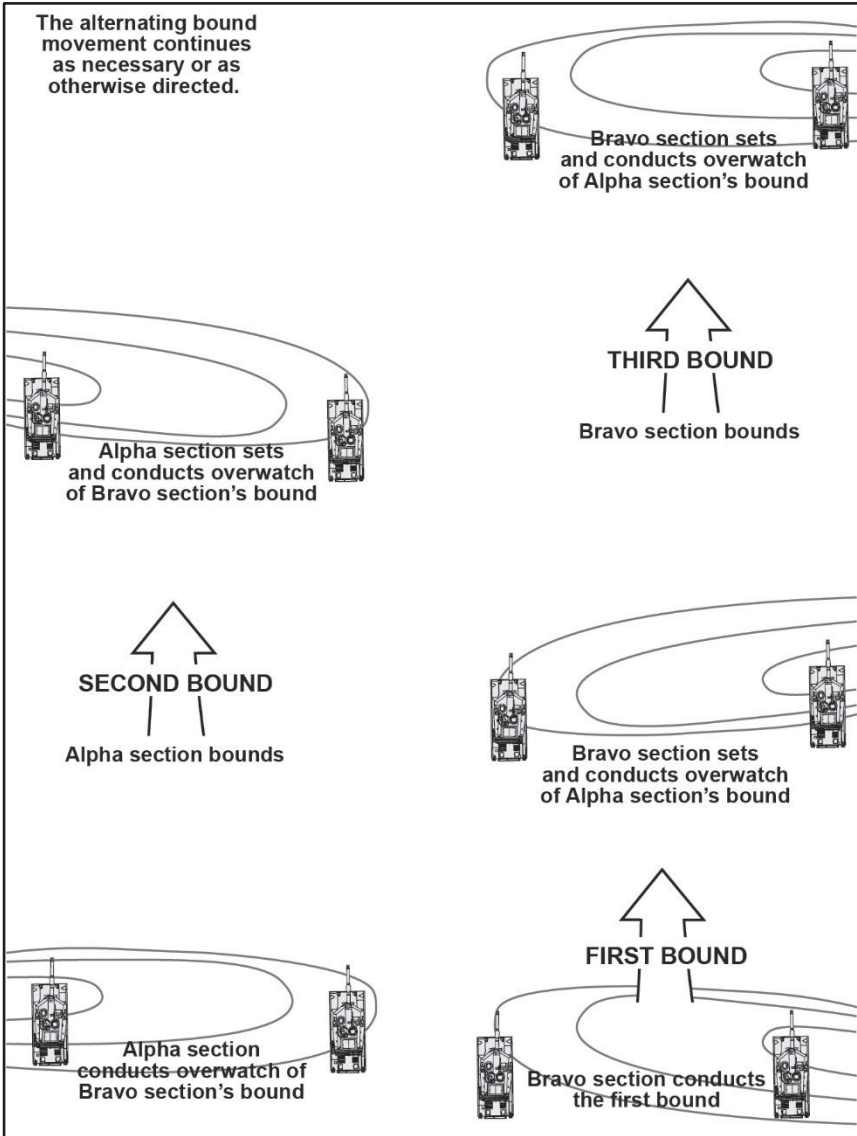


Figure 3-25. Movement by alternate bounds

Successive Bounds

3-78. If the platoon uses successive bounds, the lead section, covered by the trail section, advances and occupies a support-by-fire position. The trail section advances to a support-by-fire position abreast with the lead section and halts. The lead section then moves to the next position and the move continues. One section moves at a time, and the trail section avoids advancing beyond the lead section (see figure 3-26).

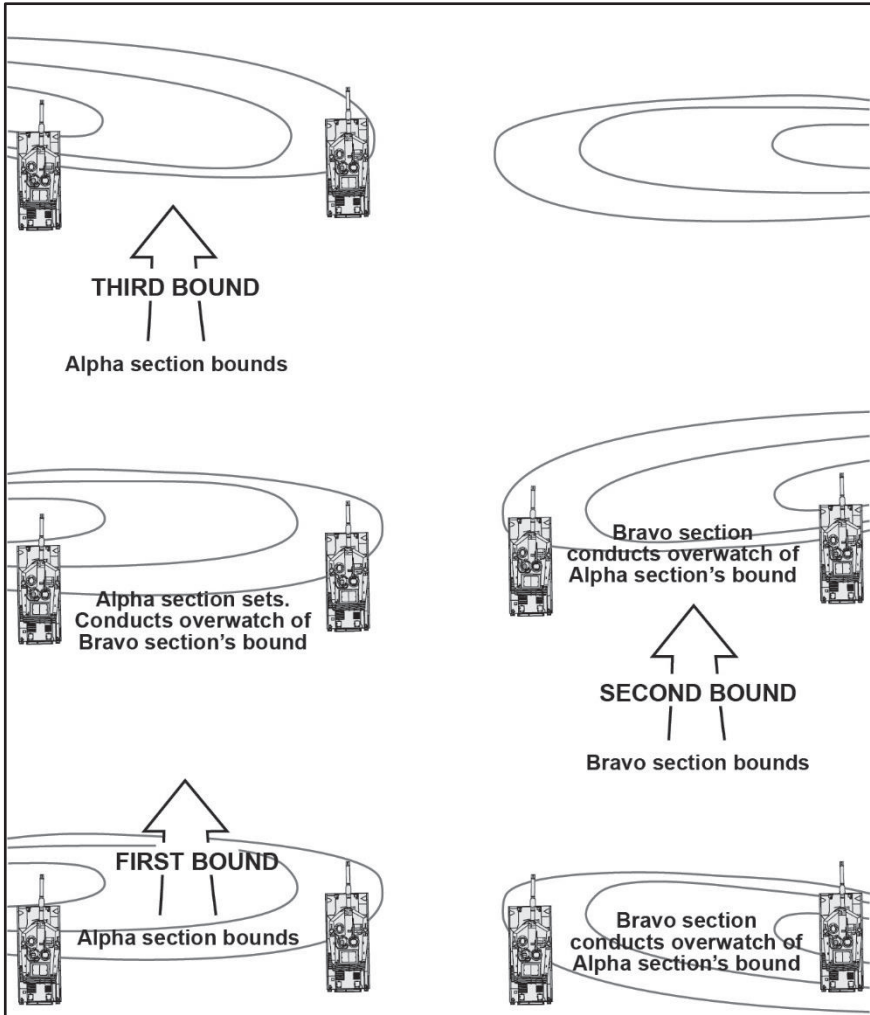


Figure 3-26. Movement by successive bounds

SECTION V – ACTIONS ON CONTACT

3-79. Actions on contact are a series of combat actions, often conducted simultaneously, taken upon contact with the enemy to develop the situation. (Refer to ADP 3-90 for more information.) Leaders analyze the enemy throughout TLP to identify all likely contact situations that may occur during an operation. This process should not be confused with battle drills. Battle drills are the actions of individual Service members and small units when they meet the enemy. Through planning and rehearsals conducted during TLP, leaders and tank crews develop and refine COA to deal with the probable enemy actions. The COA becomes the foundation schemes of maneuver. (Refer to FM 3-90-1 for more information.)

FORMS OF CONTACT

3-80. While executing offensive and defensive tasks, contact occurs when the tank platoon encounters a situation that requires a lethal or nonlethal response to the enemy. These situations may entail one or more of the following forms of contact:

- Direct.
- Indirect.
- Nonhostile civilian contact.
- Obstacles.
- CBRN.
- Aerial.
- Visual.
- Electronic warfare.

FIVE STEPS OF ACTIONS ON CONTACT

3-81. The platoon should execute actions on contact using a logical, well-organized process of decision making and action entailing these five steps:

- Deploy and report.
- Evaluate and develop the situation.
- Choose a COA.
- Execute the selected COA.
- Recommend a COA to the higher commander.

3-82. The five-step process is not a rigid, lockstep response to the enemy contact. Rather, the goal is to provide an orderly framework that enables the platoon to survive the initial contact, and then apply sound decision making and timely actions to complete the operation. The platoon reacts instinctively and instantly to the contact, and the platoon leader/*platoon commander* decides whether to execute a preplanned COA or to recommend and execute an alternate drill or action.

3-83. At times, the platoon leader/*platoon commander*, and the platoon, will have to execute several of the steps simultaneously. This makes thorough preparation an

absolute requirement in contact situations. To ensure the platoon functions as a team, reacting correctly and yet instinctively, the platoon leader/*platoon commander* establishes SOPs and conducts comprehensive training and rehearsals covering each step.

3-84. Platoon leaders/*platoon commanders* must understand that properly executed actions on contact require time at platoon- and section-levels. To fully develop the situation, the platoon may have to execute extensive lateral movement, conduct reconnaissance by fire, or call for and adjust indirect fires. Each of these actions requires time to execute. The platoon leader/*platoon commander* balances the time required for subordinate elements to conduct actions on contact with the need of the company to maintain momentum. In terms of slowing the tempo of an operation, however, the loss of a section or vehicle is usually more costly than the additional time required to allow the subordinate element to properly develop the situation.

DEPLOY AND REPORT

3-85. The platoon leader/*platoon commander* deploys the platoon when one of the general categories of initial contact is recognized or receives a report of enemy contact. No matter how thoroughly the platoon leader/*platoon commander* prepares for an operation as direct contact with the enemy is always a possibility.

3-86. When the platoon makes contact with the enemy, it responds according to the circumstances of the situation. Most critically, if the contact entails enemy AT fire, the platoon in contact returns fire immediately. Tanks returning fire alert the rest of the platoon with a contact report.

3-87. The platoon leader/*platoon commander* has several choices in deploying the platoon. In many cases, the platoon leader/*platoon commander* initiates one of the seven battle drills. This usually is a contact or action drill, with the platoon attempting to acquire and engage the enemy. The platoon leader/*platoon commander* can also order the tanks to immediately seek the best available covered and concealed position. The position should afford unobstructed observation and fields of fire and allow the platoon to maintain flank security. Tank crews will also seek cover and concealment in the absence of a deployment order from the platoon leader/*platoon commander*.

3-88. If the platoon is under enemy fire, it uses direct and indirect fire to suppress the enemy and restore freedom of maneuver. Simultaneously, the platoon leader/*platoon commander* reports contact using a SPOTREP format to provide all available information on the commander (refer to FM 6-99 for more information on report formats). This alerts the commander and allows the initiation of necessary actions.

EVALUATE AND DEVELOP THE SITUATION

3-89. While the platoon deploys, the platoon leader/*platoon commander* evaluates the situation quickly, and develops it through action. The platoon leader/*platoon commander* uses SPOTREPs from the tank commanders, to make the evaluation. The platoon leader/*platoon commander* analyzes the information to determine critical

operational considerations, including the following:

- Size of the enemy element.
- Location, composition, activity, and orientation of the enemy force.
- Impact of obstacles and terrain.
- Enemy capabilities (especially antiarmor capability).
- Probable enemy intentions.
- Method of gaining positional advantage over the enemy.
- Friendly situation (location, strength, and capabilities).
- Possible friendly COAs to achieve the specified end state.

Note. Because the tank platoon usually operates as part of a company team or Cavalry troop, additional Infantry, scout, or tank platoons will usually be available to help the commander and platoon leader/*platoon commander* in developing and confirming the enemy situation.

CHOOSE A COURSE OF ACTION

3-90. Once the platoon leader/*platoon commander* develops the situation the platoon leader/*platoon commander* selects a COA that meets the requirements of the commander's intent and is within the platoon's capabilities. The platoon leader/*platoon commander* has several options in determining the COA:

- Direct the platoon to execute the original plan.
- Issue FRAGORDs to refine the original plan, ensuring it supports the commander's intent.
- Report the situation and recommend an alternative COA based on an unforeseen enemy or change in battlefield situation.
- Direct the platoon to execute tactical movement (employing bounding overwatch and support by fire within the platoon) and reconnaissance by fire to further develop the situation.

3-91. The COA may be for the platoon to orient weapon systems and engage an enemy without changing its direction or speed of movement along the axis of advance. This COA can be used when contact is made with small arms fire, non-armor-defeating weapons, or when the platoon sights the enemy without being engaged and does not want to stop or slow its movement. The platoon leader/*platoon commander* initiates by using visual signals or the radio. Over the radio, the platoon leader/*platoon commander* uses the contact report format and adds the execution element FIRE as a platoon fire command.

CONSIDERATIONS IN CHOOSING A COURSE OF ACTION

3-92. If a predetermined COA is not the best option, the platoon leader/*platoon commander* analyzes the commander's intent. In most cases, the commander identifies the criteria for anticipated actions on contact in terms of the enemy's capabilities. The

commander specifies criteria for destroying, fixing, and bypassing the enemy, as well as the applicable disengagement criteria. Based on the commander's intent and these criteria, the platoon may develop a new COA.

3-93. Refinements to the original plan or development of a new COA may change the scheme of maneuver. In most situations, the intent of maneuver is to gain positions of advantage over the enemy, forcing the enemy to fight in two directions. One element moves to the position of advantage while another element overwatches and supports.

EXECUTE THE SELECTED COURSE OF ACTION

3-94. When executing the selected COA the platoon transitions to maneuver. It then continues to maneuver to advance while in contact to reach the point on the battlefield from which it executes its tactical task. The platoon can employ a number of tactical tasks as COAs, any of which may be preceded (or followed) by additional maneuver. (Refer to FM 3-90-1 for more information.) These tasks include but are not limited to:

- Attack by fire.
- Breach.
- Bypass.
- Clear.
- Control.
- Counter reconnaissance.
- Disengagement.
- Exfiltrate.
- Follow and assume.
- Follow and support.
- Occupy.
- Reduce.
- Retain.
- Secure.
- Seize.
- Support by fire.

3-95. Based on details of the enemy situation, the platoon leader/*platoon commander* may have to alter the COA during execution. For example, as the platoon maneuvers to destroy what appears to be a lone enemy tank, it discovers six more tanks in prepared fighting positions; in this situation, the platoon leader/*platoon commander* would inform the commander and recommend an alternate COA, such as an attack by fire against the enemy tank company.

Actions on Contact with an Anticipated Inferior Force

3-96. Figures 3-27 through 3-29 on pages 3-36 through 3-38, depict actions on contact when the platoon encounters an inferior enemy element. In this case, the commander and platoon leader/*platoon commander* have anticipated contact with such a force and have planned for actions on contact by including possible COAs in their OPORDs and rehearsals.

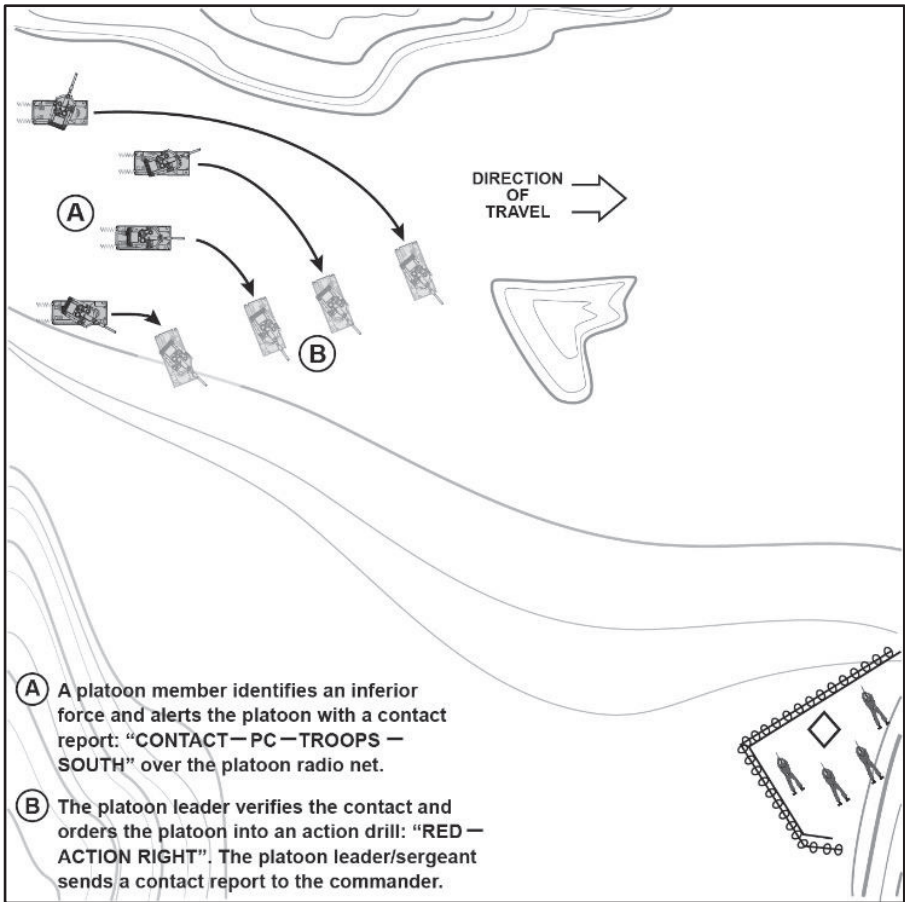


Figure 3-27. Platoon makes initial contact, deploys using action drill, and reports

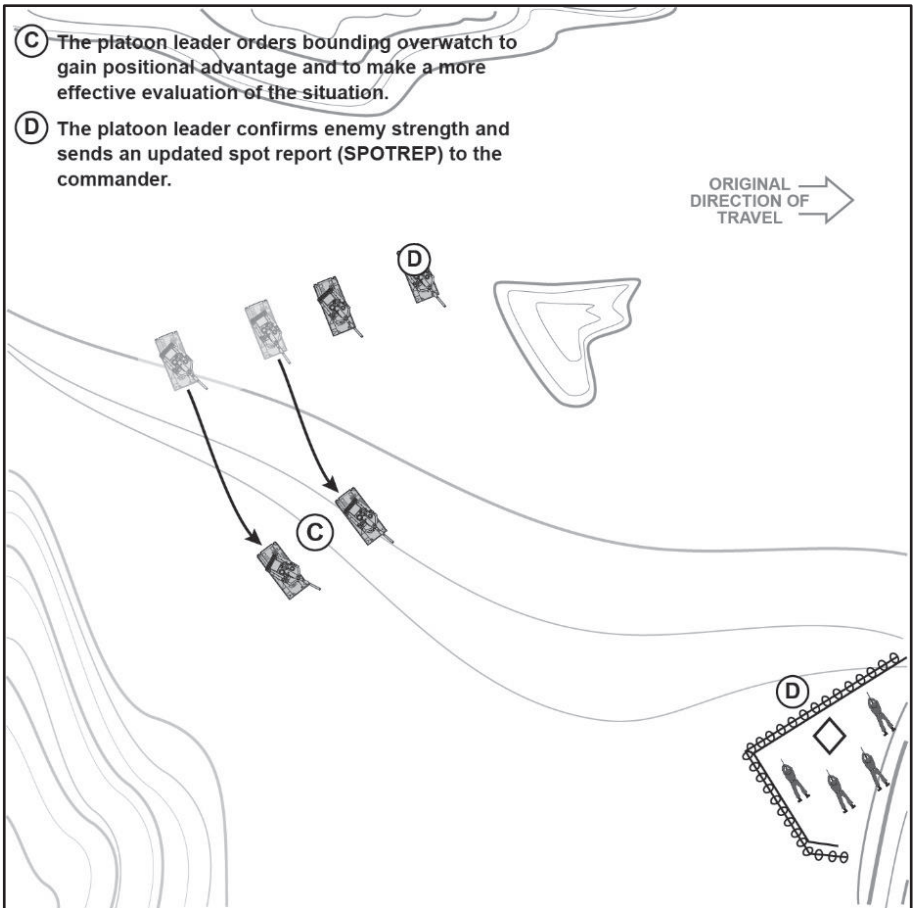


Figure 3-28. Platoon develops the situation

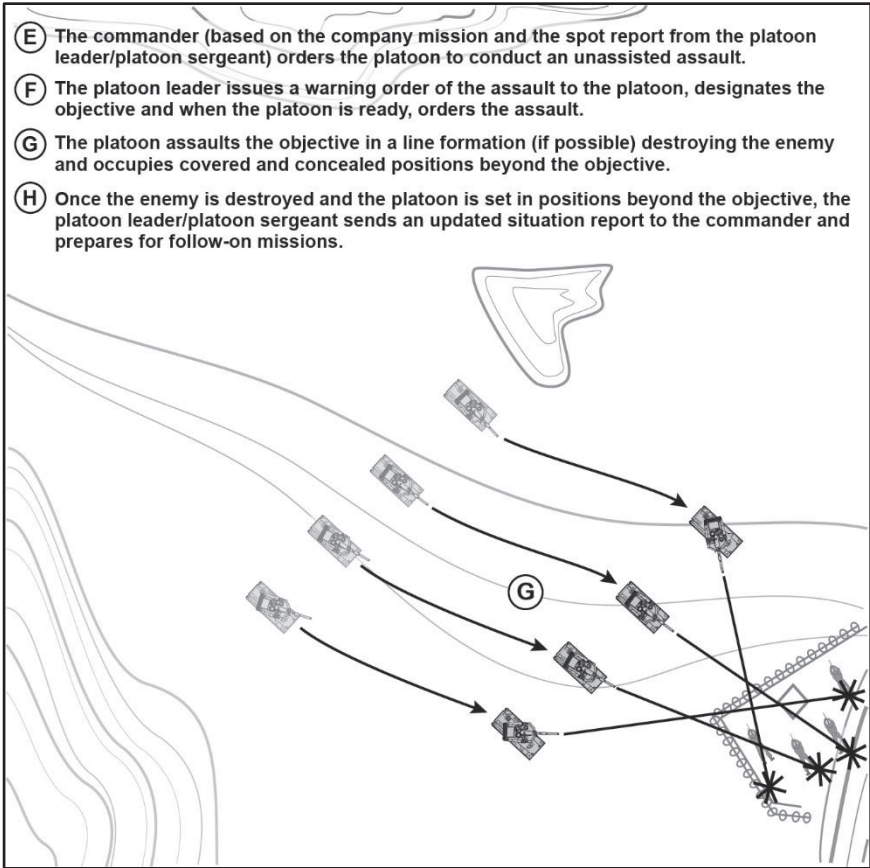


Figure 3-29. Platoon leader chooses course of action; platoon executes the assault

Actions on Contact with an Unanticipated Superior Force

3-97. Figure 3-30 through figure 3-32 on pages 3-39 through 3-41, show actions on contact when the platoon unexpectedly encounters a superior enemy force.

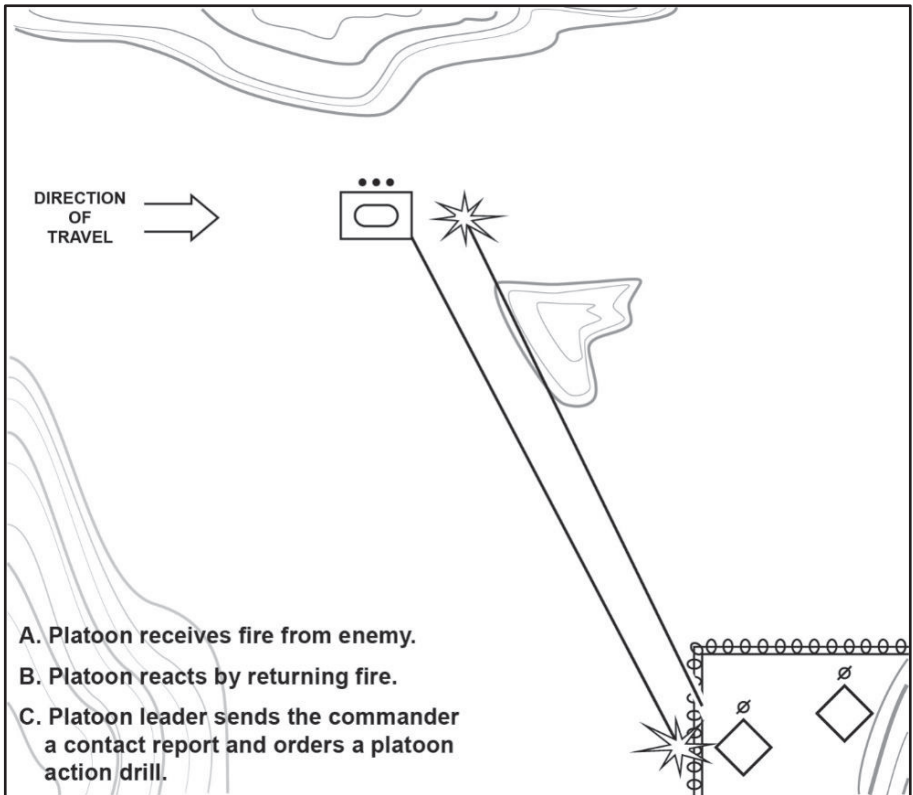


Figure 3-30. Platoon makes initial contact, deploys, and reports

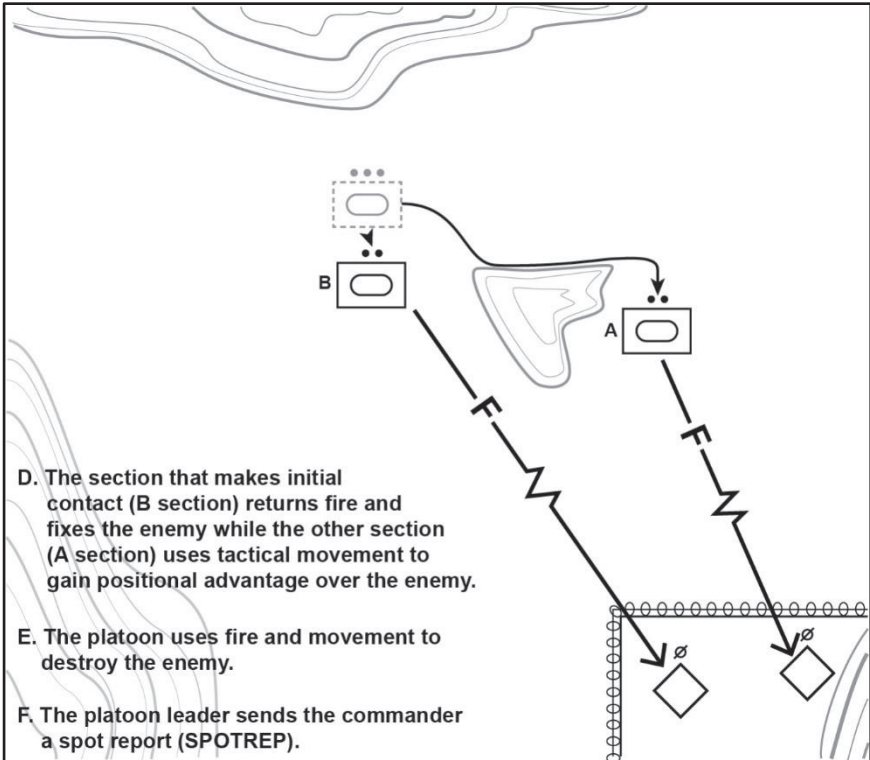


Figure 3-31. Platoon executes battle drill; platoon leader evaluates the situation as drill is executed

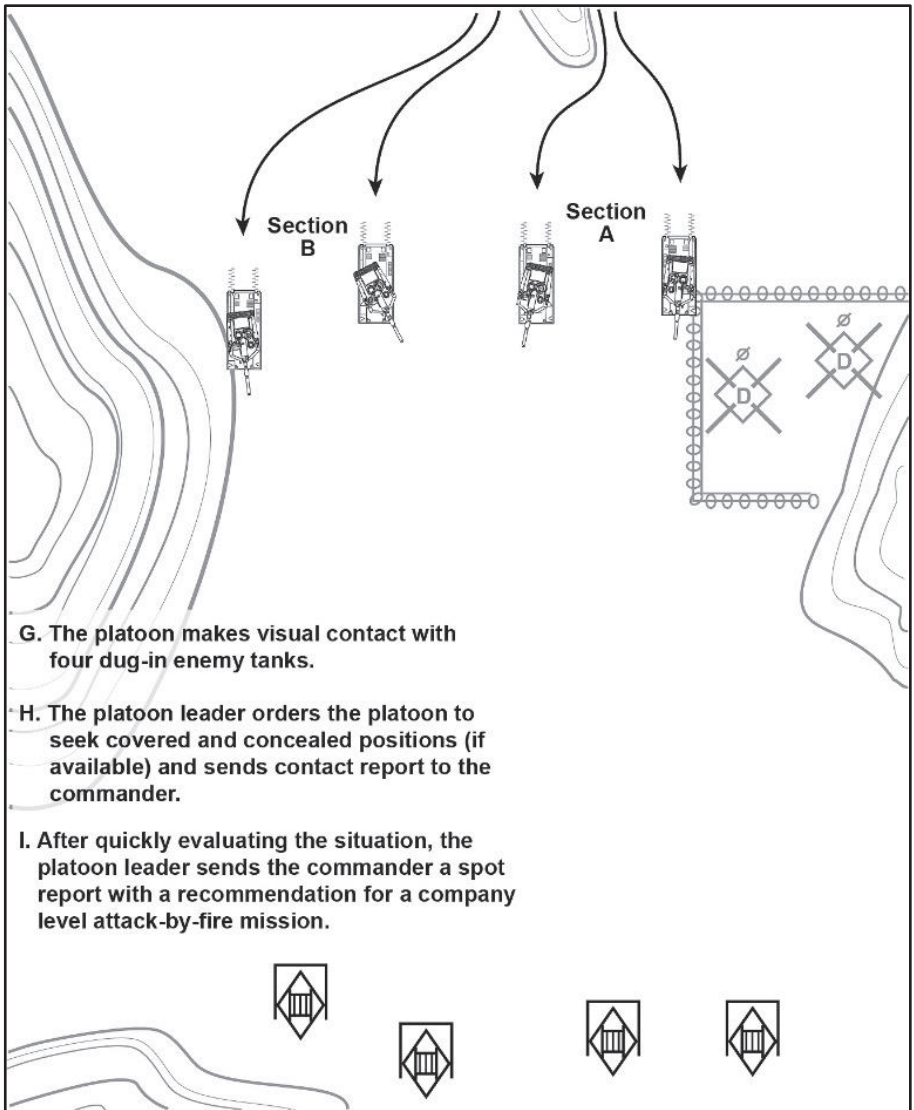


Figure 3-32. Platoon develops the situation and identifies superior enemy

RECOMMEND A COURSE OF ACTION TO HIGHER COMMANDER

3-98. Once the platoon leader/*platoon commander* selects a COA, keeping in mind the commander's intent, the platoon leader/*platoon commander* informs the commander, who has the option of disapproving it based on its impact on the overall mission. In addition to recommending a platoon COA for commanders' approval, the platoon leader/*platoon commander* may be in a unique position to recommend an overall

company COA. To avoid delay, unit SOP may provide automatic approval of certain actions.

BATTLE DRILLS

3-99. When the tank platoon makes contact with the enemy, the platoon leader/*platoon commander* usually initiates a battle drill. Drills can be initiated following reports or observation of enemy activity, but are most commonly ordered upon receipt of enemy fires.

3-100. Battle drills provide virtually automatic responses to situations in which the immediate and, as appropriate, violent execution of an action is vital to the platoon's safety or to its success in combat. They allow the platoon leader/*platoon commander* to protect the platoon from the effects of enemy fires, to quickly mass the platoon's combat power and fires, or to move the platoon to a position of advantage over the enemy.

3-101. Drills are standardized collective actions, executed by each tank crew with minimal instruction and without application of a deliberate thought process. They can be carried out under almost any type of battlefield conditions and from any formation or technique of movement, although execution can be affected by the factors of METT-TC.

Note. Platoon leaders/*platoon commanders* should note that the use of battle drills does not relieve them of the requirement for logical, timely decision-making when critical situations arise on the battlefield.

3-102. The platoon can expect to execute any of the following standard battle drills: change of formation drill, contact drill, action drill, react to indirect fire drill, react to air attack drill, react to a nuclear attack drill, and react to a chemical or biological attack drill. Commanders and leaders at all levels must be ready to augment or adjust these seven basic drills based on the threat, terrain, and ROE. In addition, they must ensure their platoons rehearse battle drills until they are able to execute the drills perfectly no matter what command and control problems arise.

Note. In figures 3-33 through 3-39 on pages 3-43 through 3-50 that accompany the discussion of the seven battle drills, vehicle numbers illustrate the wingman concept. In the field, the location and sequence of vehicles during the drill is prescribed in the platoon SOP or the orders for the operation. The tactical situation also influences vehicle location.

CHANGE OF FORMATION DRILL

3-103. This drill is executed to accomplish a rapid change of formation in response to a change in terrain or enemy situation. The platoon leader/*platoon commander* must ensure that each tank commander knows the new formation and the relative position of each tank in the new formation. The platoon leader/*platoon commander* uses visual signals or the radio to initiate the drill. Figure 3-33 illustrates the movement of individual tanks during a change of formation from column to wedge to line.

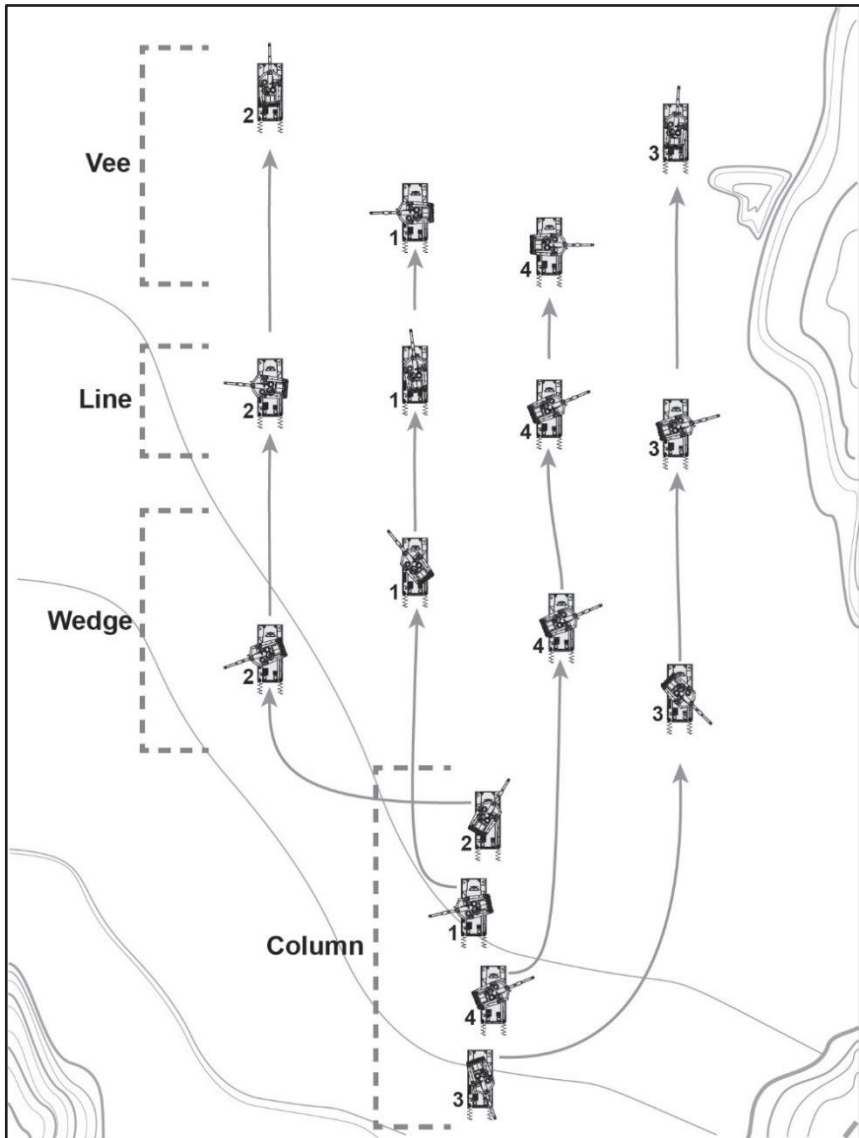


Figure 3-33. Change formation drill

CONTACT DRILL

3-104. The contact drill enables the platoon to orient weapon systems and engage an enemy without changing its direction or speed of movement along the axis of advance. This drill is used when contact is made with small arms fire or when the platoon sights the enemy without being engaged and does not want to stop or slow its movement. The platoon leader/*platoon commander* initiates the contact drill using visual signals or the radio. Over the radio, the platoon leader/*platoon commander* uses the contact report format and adds the execution element FIRE as a platoon fire command. Figure 3-34 illustrates a contact drill from a wedge formation.

Note. The main gun orientation for wingman Tank 2. If a tank's weapon systems are masked by another tank, the masked tank maintains weapons orientation and flank security as prescribed in the OPORD; this helps to prevent fratricide.

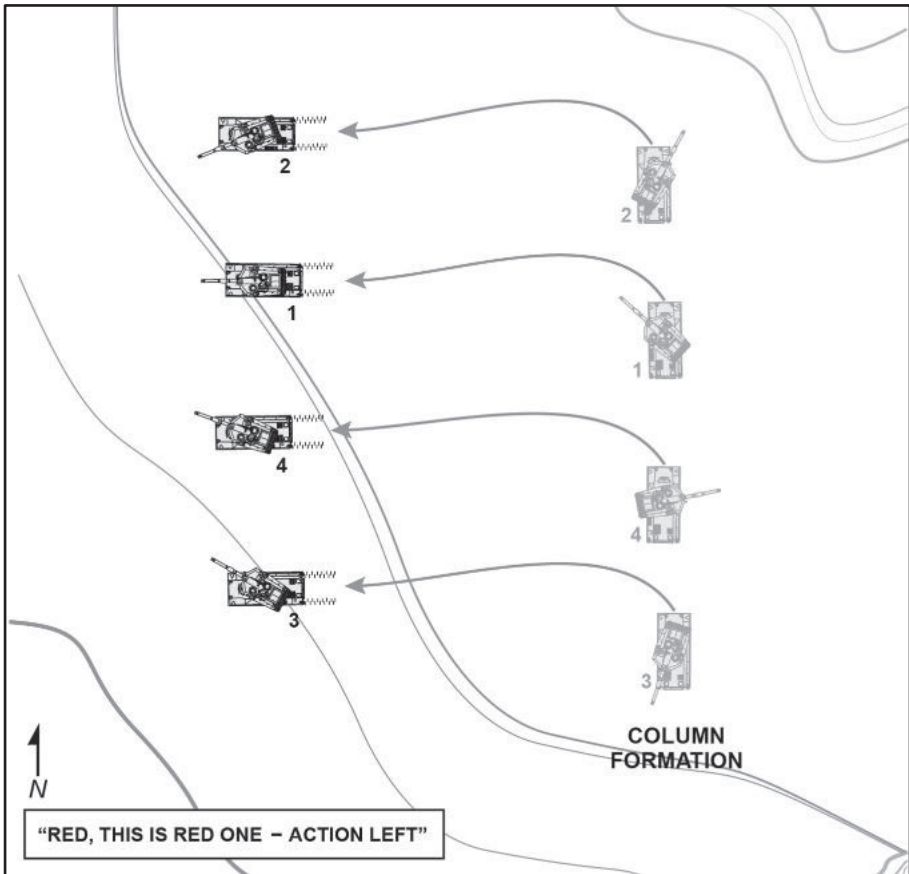


Figure 3-34. Contact drill

ACTION DRILL

3-105. The action drill permits the entire platoon to change direction rapidly in response to terrain conditions, obstacles, FRAGORDs from the commander, or enemy contact. The platoon leader/*platoon commander* uses visual signals or the radio to order the action drill, which can be initiated with or without enemy contact.

Action drill without enemy contact

3-106. The platoon leader/*platoon commander* can execute an action drill to avoid a danger area or obstacle or to respond to FRAGORDs from the commander. When the platoon leader/*platoon commander* initiates the action drill, tanks come on line and continue to move in the prescribed direction unless the platoon leader/*platoon commander* directs a change of formation. Figure 3-35 on page 3-46 illustrates tanks' relative positions during various action drills without contact.

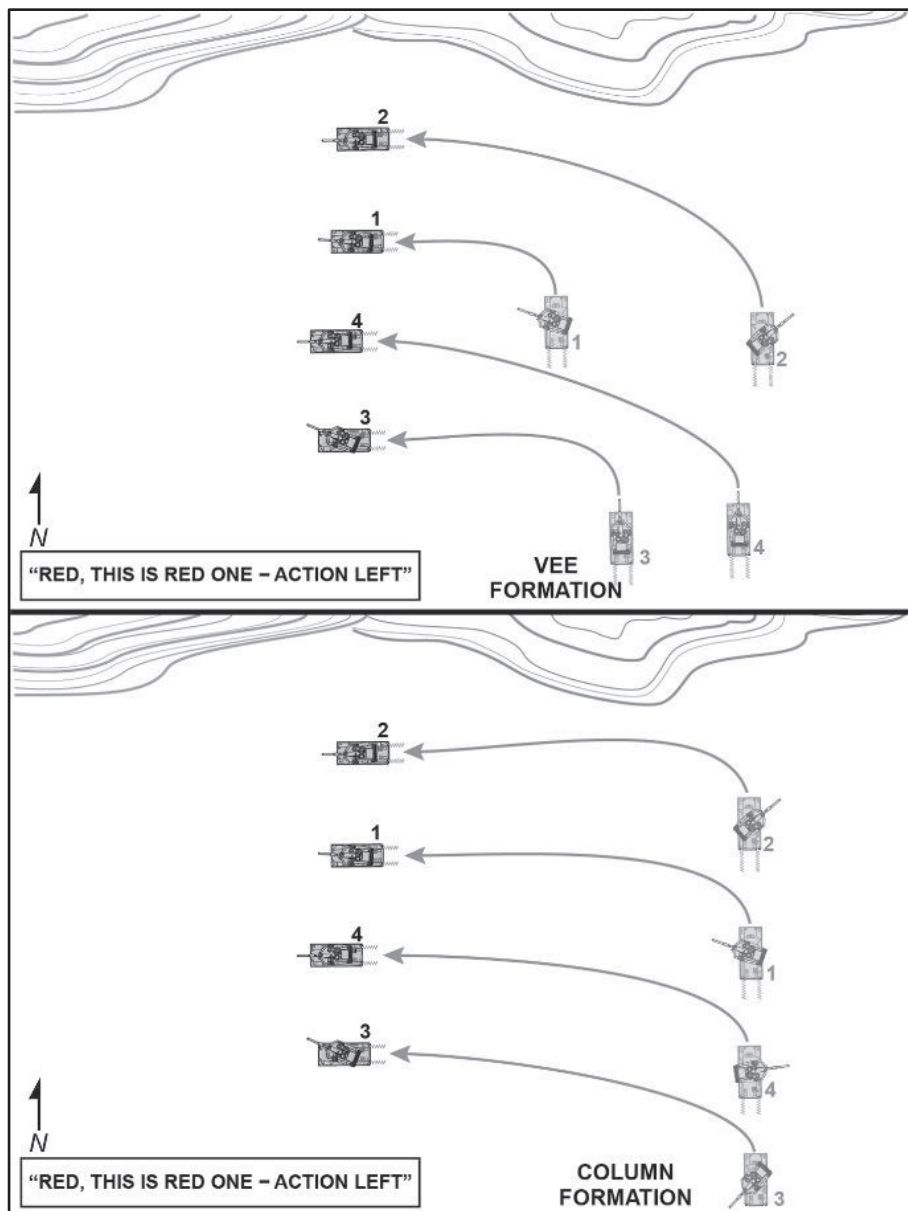


Figure 3-35. Action drill without enemy contact

Action drill with enemy contact

3-107. Following a contact report alerting the platoon that enemy contact involves AT weapon systems, the platoon leader/*platoon commander* can direct an action drill to orient the platoon's frontal armor toward the AT fire while moving to cover and concealment. If the platoon cannot reach a covered and concealed position or achieve weapon standoff, the platoon leader/*platoon commander* directs the platoon to assault the enemy. Figures 3-36 through 3-39 on pages 3-47 through 3-50 illustrate examples of action drills in reaction to enemy contact.

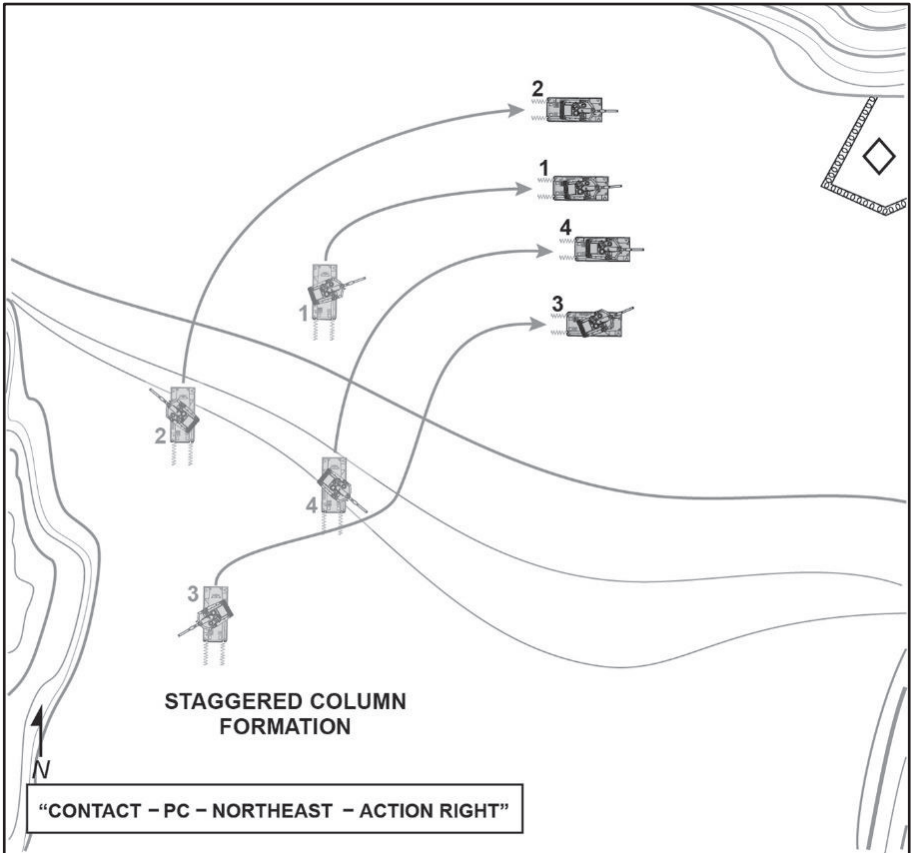


Figure 3-36. Action drill with enemy contact

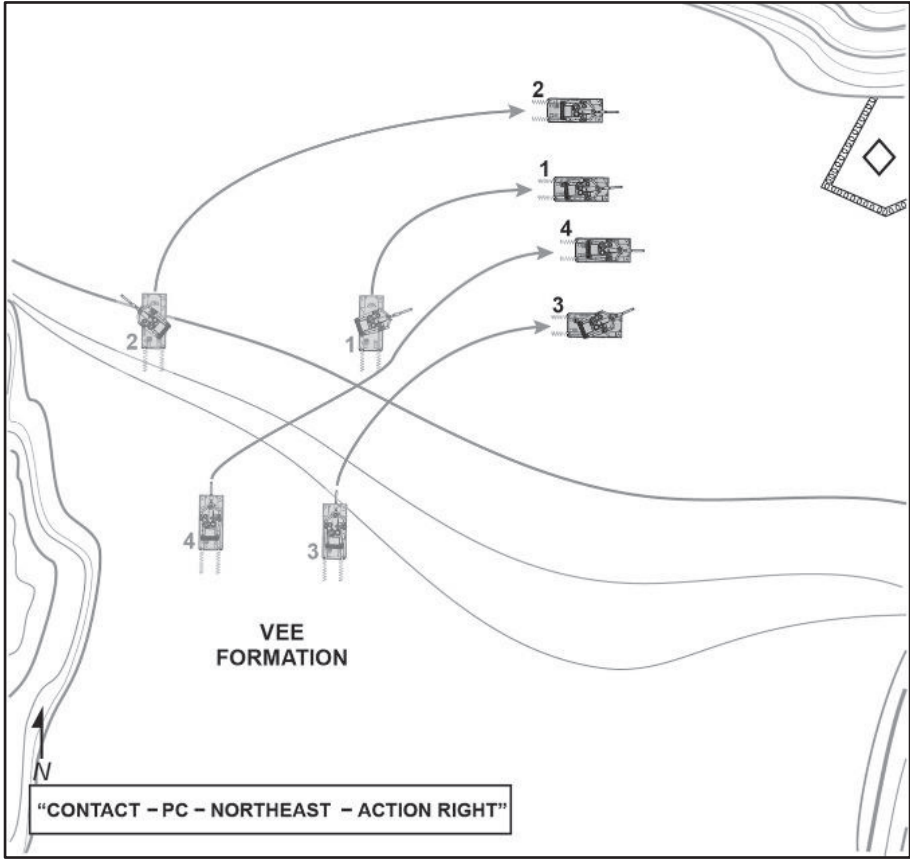


Figure 3-37. Action right from a vee in contact

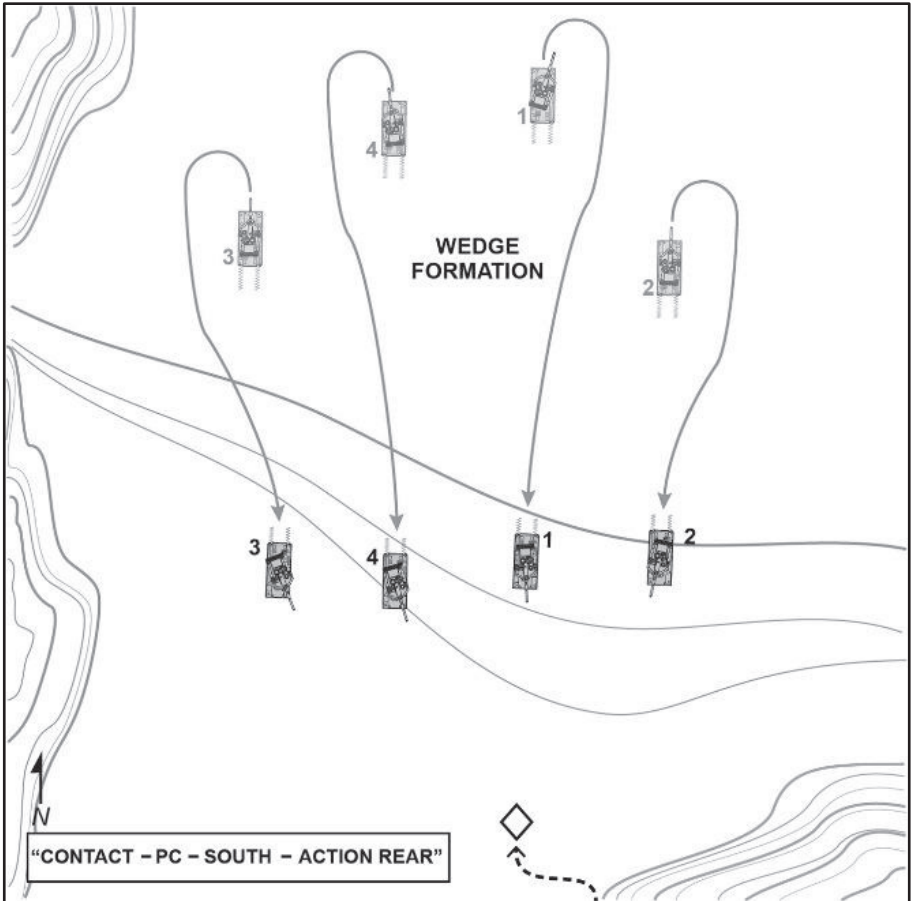


Figure 3-38. Action rear from a wedge in contact

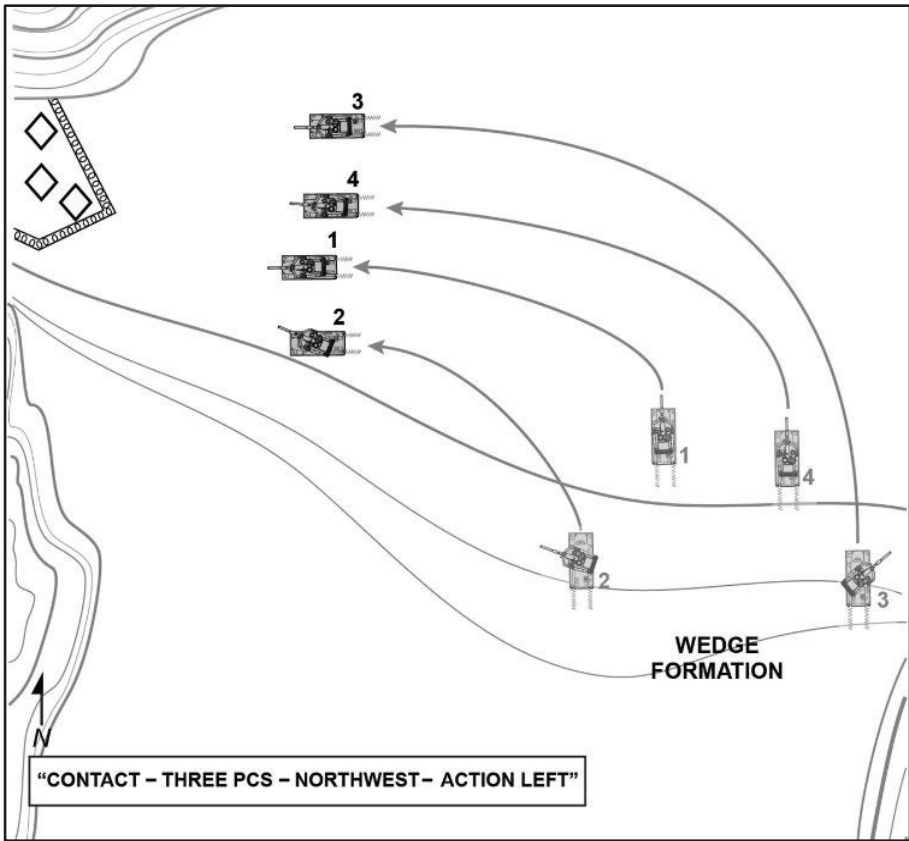


Figure 3-39. Action left from a wedge in contact

REACT TO INDIRECT FIRE DRILL

3-108. When the platoon receives unexpected indirect fire, it moves out of the impact area unless it is also engaged in direct fire contact or is directed to remain stationary. Tank commanders place their hatches in the open protected position; other crewmen close their hatches. Crews also close ballistic doors. They mask based on the automatic masking criteria established in the OPORD or if they suspect the use of chemical agents. The platoon leader/*platoon commander* sends a SPOTREP to the commander.

3-109. If the platoon is moving when it receives suppressive artillery fire, it executes an action drill to avoid the impact area or continues to move to clear the impact area and continue the mission (see figure 3-40). If it is stationary, the platoon should attempt to clear the impact area. Once the platoon clears the artillery impact area, individual crews place their hatches in the appropriate position, open ballistic doors, check antennas, and return to positions or continue the mission.

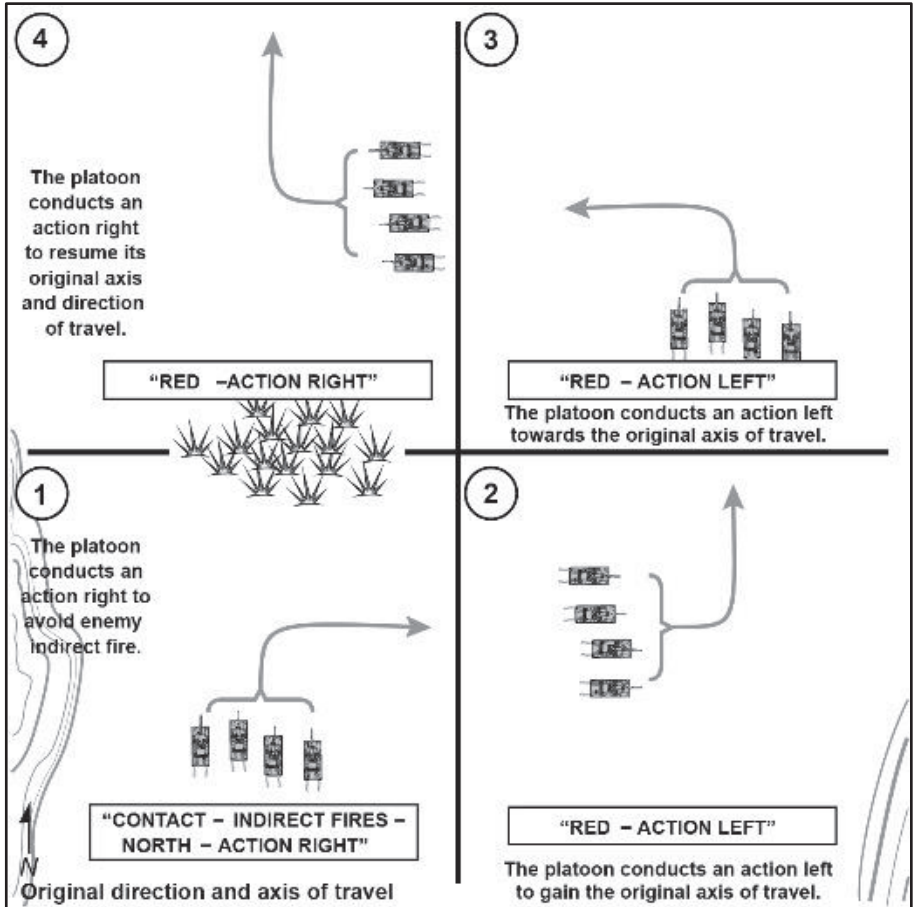


Figure 3-40. React to indirect fire drill

Note: Several factors, such as the commander's orders or the enemy situation, may prevent the platoon from moving during direct fire engagements or defensive operations. For example, the commander may require the platoon to occupy hide or turret-down positions while continuing the mission. In such a case, the platoon leader/*platoon commander* must request permission from the commander before clearing the impact area.

3-110. The commander should address the platoon's reaction to anticipated indirect fires in the actions on contact subparagraph of the OPORD. When the platoon receives anticipated indirect fires, it reacts according to the commander's guidance, which it should already have analyzed and rehearsed. If the platoon needs to execute a COA different from that directed by the commander, the platoon leader/*platoon commander* should request permission from the commander before executing the alternate action.

REACT TO AIR ATTACK DRILL

3-111. When the platoon observes high-performance aircraft, helicopters, or unmanned aircraft systems that could influence its mission, it initially takes passive air defense measures unless the situation requires immediate active measures. In a passive air defense, the platoon takes actions (such as dispersing or stopping) to avoid detection altogether or to minimize the aircraft's target acquisition capability. The platoon also prepares for active air defense measures.

Passive Air Defensive Measures

3-112. The individual or vehicle who identifies the threat aircraft alerts the platoon with a contact report the contain the following elements:

- Contact.
- Red air.
- Cardinal direction (specify north, south, east, or west).

3-113. The platoon deploys or takes the appropriate actions. If the platoon is not in the direct path of an attacking aircraft, the platoon leader/*platoon commander* orders tanks to seek cover and concealment and halt with at least a 100-meter interval between vehicles; the platoon also may be ordered to continue moving as part of the company.

3-114. The platoon prepares to engage on order of the platoon leader/*platoon commander* using machine gun or main gun fire. They also continue to scan for follow-on aircraft.

Active Air Defensive Measures

3-115. If the platoon leader/*platoon commander* determines that the platoon is in the direct path of an attacking aircraft, the platoon leader/*platoon commander* initiates the active react to air attack drill. The platoon initiates fire with the intent to force aircraft to take self-defense measures that alter their attack profile and reduce their effectiveness. The platoon leader/*platoon commander* may use a burst of tracers to designate an aim point for platoon machine gun anti-aircraft fires (see figure 3-41). Volume is the key to effectiveness of these fires; tanks throw up a “wall of steel” through which aircraft must fly. The main gun is effective against hovering attack helicopters.

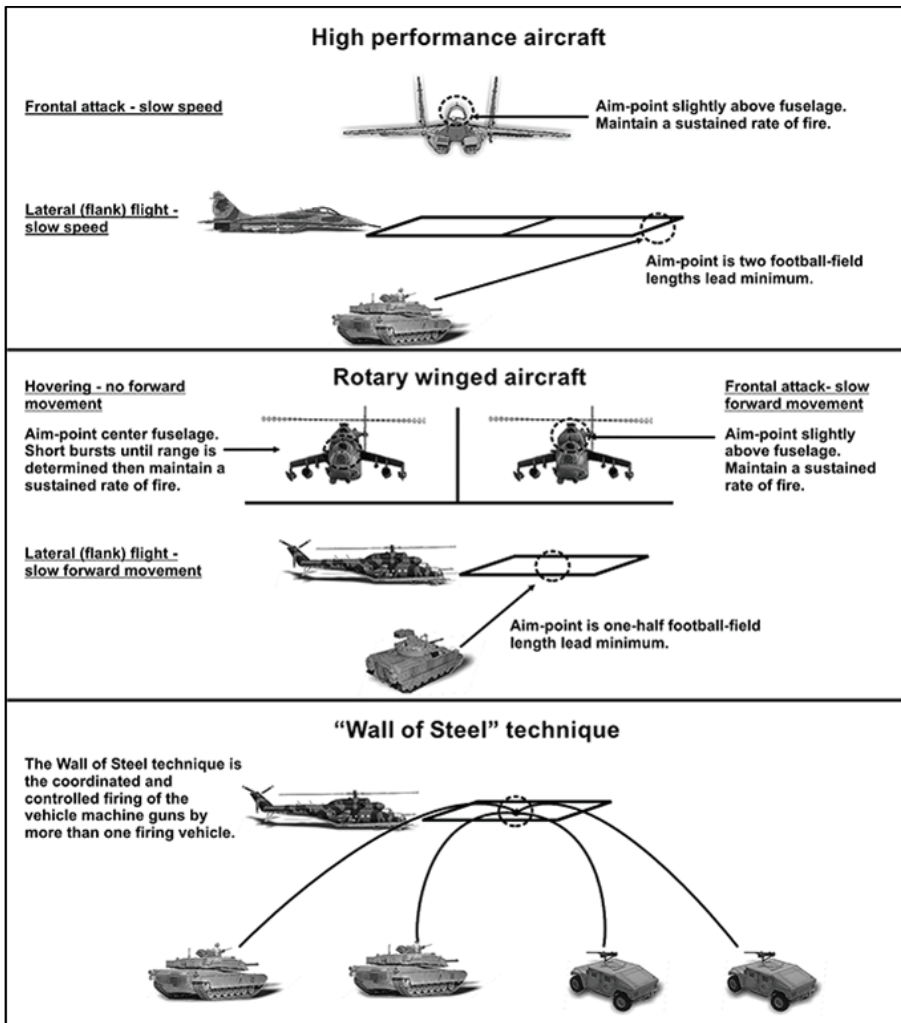


Figure 3-41. Machine gun aim points

3-116. Tanks can create a nonlinear target by moving as fast as possible at a 45-degree angle away from the path of flight and toward attacking aircraft (see figure 3-42). The platoon maintains an interval of at least 100 meters between tanks, forcing aircraft to make several passes to engage the entire platoon.

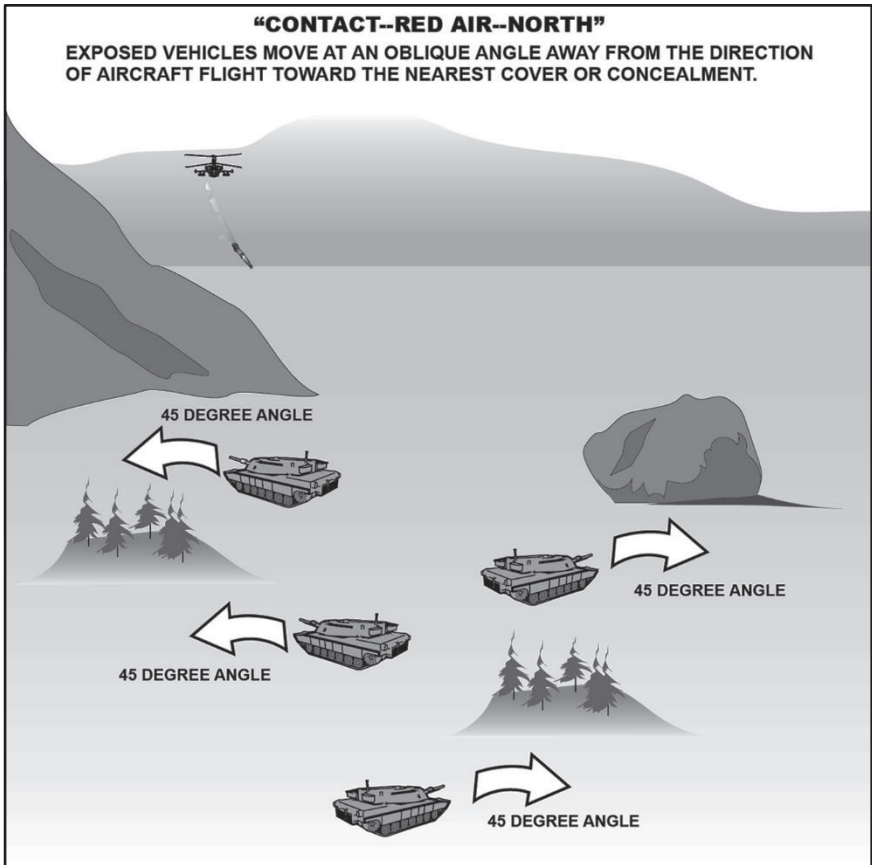


Figure 3-42. Evading enemy aircraft

3-117. Tanks move quickly to covered and concealed positions and freeze their movement for at least 60 seconds after the last flight of aircraft has passed. The platoon leader/platoon commander sends a SPOTREP to update the commander as soon as possible.

REACT TO CBRN ATTACK

3-118. The platoon executes this drill whenever an automatic masking event occurs, the chemical agent alarm sounds, M9 detection paper indicates the presence of chemical agents, a platoon member suspects the presence of chemical or biological agents or a nuclear attack occurs.

3-119. For chemical/biological, all personnel don their protective mask within nine seconds or 15 seconds for masks with a hood. Personnel assume MOPP 4 within eight minutes. The element identifies the chemical agent using M8 chemical detector paper and the chemical detector kit. The platoon leader/*platoon commander* reports a CBRN attack and submits CBRN 1 reports to higher.

3-120. For nuclear attack, if mounted, the platoon buttons up and closes the breach and ballistic doors. If time permits, position the vehicle behind a protective terrain feature, and turn off the master power until the effects of the blast have passed. Dismounted crewmen will drop to the ground and cover exposed skin until blast effects have passed.

3-121. Once the CBRN attack is over, the platoon will administer self-aid and buddy aid to crewmembers with symptoms of chemical or biological agent poisoning. Ensure individual crewmembers decontaminate their skin. Conduct operator's spray down and decontamination of equipment as necessary. Initiate continuous monitoring with chemical detection kits, and submit CBRN 1 and follow-up reports as needed.

Note. If the chemical detection kit records a negative reading inside an overpressurized tank, the crew can initiate unmasking procedures.

3-122. The platoon continues to monitor for chemical or biological agents as the situation warrants. This allows the platoon to initiate actions to reduce MOPP levels.

SECTION VI – OPERATIONS DURING LIMITED VISIBILITY

3-123. Units conduct limited visibility operations for various reasons, such as to achieve surprise against the enemy or gain a position of advantage by means of stealth. Darkness may partially limit the ability of tank crews to see the battlefield. There are, however, other conditions that restrict visibility; the most common are the following:

- Dust, smoke, and other obscuration factors caused by weapon firing and movement of platoons and equipment.
- Weather conditions, including rain, snow, fog, and blowing sand and dust.

3-124. The tank platoon must train to fight effectively in all types of visibility conditions by using its technology and basic combat skills to sustain continuous operations and destroy the enemy.

EQUIPMENT

3-125. The tank platoon is equipped with the following types of equipment for use in limited visibility conditions:

- Driver's night-vision viewer. This sight is either passive (the vehicle visualization system-2/driver's vision enhancer) or thermal (the driver's thermal viewer). It enhances the driver's ability to move the tank and enables the driver to help in target acquisition and to observe rounds in darkness or other limited visibility conditions.

- PVS-7 or PVS-14. This passive-vision device enables the tank commander to observe from the opened hatch to control movement and provide close-in security. There are normally two PVS-7s per tank.
- PAS-13. The AN/PAS-13 Thermal Weapon Sight can either be mounted on .50 caliber machine gun or used as a standalone observation device. It provides a capability that increases surveillance and target acquisition range, and penetrates obscurants either day or night.
- Gunner's primary sight and commander's extension. This integrated thermal sight gives the gunner and tank commander the capability to see and engage targets under almost any visibility condition.
- *Remote Thermal Sight/Abrams Integrated Display and Targeting System: Allows the tank commander to aim and engage the commander's weapon system using a thermal optic independent of the Gunner's Primary Sight on the Marine Corps' M1A1. The Abrams Integrated Display and Targeting System, once fully fielded, will replace the Remote Thermal Sight.*
- Commander's independent thermal viewer (known as CITV). This is a fully integrated, full-target engagement sight on the M1A2. It provides the tank commander with a redundant target acquisition and surveillance capability equivalent to that of the gunner's primary sight with the thermal imaging system. The CITV extends the tank commander's field of view, giving the tank commander observation capability independent of the gunner's primary sight.
- The common remotely operated weapon station is designed for remote operation of .50 caliber and M240B machine guns. It mounts on a M1A2 tank. Operators inside the tank are able to observe, select, and engage moving and static targets with high precision during night and day, either while stationary or while on the move.

VEHICLE IDENTIFICATION

3-126. The problem of vehicle identification is compounded in limited visibility conditions. Tank commanders must be able to distinguish vehicles of their platoon and company and of other friendly elements from those of the enemy. Most unit SOPs cover vehicle marking and identification procedures. In addition, the platoon can use the following techniques to enhance command and control and to help prevent fratricide:

- Attach color-coded lights, chemical lights or infrared chemical lights to the rear of the turret or the hull.
- Use of combat vehicle identification panels.
- Range flags.
- Replace the brake light cover with color-coded plastic.
- Use luminous or thermal tape to "outline" vehicles or to make battle boards.
- Use radio and digital systems to provide the platoon with frequent updates of friendly and enemy unit locations.

TACTICAL MOVEMENT AND ATTACKS

3-127. The fundamentals for executing tactical movement and attacks discussed elsewhere in this publication are applicable during periods of limited visibility. The following paragraphs 3-127 through 3-129 cover additional considerations for the planning, preparation, and execution of these operations when visibility is restricted.

PLANNING

3-128. During the planning phase, the platoon leader/*platoon commander* must pay particular attention to routes, formations, and navigational aids. The platoon leader/*platoon commander* must conduct a thorough reconnaissance to identify locations where the platoon could become disoriented. The reconnaissance must also focus on finding rough or restricted terrain that is even more difficult to negotiate with limited visibility. Whenever possible, elements conducting reconnaissance should mark important points or areas so that follow-on forces can recognize them under conditions of limited visibility. Such terrain may require a change in formation, movement technique, or employment of dismounted ground guides.

PREPARATION

3-129. In the preparation phase, the platoon leader/*platoon commander* conducts rehearsals in as many types of adverse conditions as possible to prepare the platoon for potential command and control problems. The platoon leader/*platoon commander* must stress light discipline. During PCCs and PCIs, the platoon leader/*platoon commander* or platoon sergeant views each tank using a passive sight to ensure that sources of light have been dimmed or covered so they are not visible to the enemy. During confirmation briefs and rehearsals, the platoon leader/*platoon commander* must ensure that all personnel understand the platoon's projected actions during each phase of the operation. One technique is to designate waypoints or PLs as trigger points for platoon actions.

EXECUTION

3-130. During the execution phase, tank commanders use the PVS-7 or PVS 14 and the CITV (if available)/*remote thermal sight* to help their drivers with navigation and to enhance situational understanding. The platoon leader/*platoon commander* must assume that the enemy possesses the same limited visibility observation capabilities as friendly units. Use of terrain to mask movement and deployment remains critical since limited visibility may create a false sense of protection from observation. During movement, the distance between platoon vehicles is reduced to allow vehicles to observe each other and to decrease the time necessary to react to enemy contact.

3-131. When the platoon encounters enemy elements, an effective technique is to have the vehicle that makes contact fire a steady burst of machine gun fire in the direction of the enemy to orient the rest of the platoon. The platoon must adhere strictly to applicable control measures, especially those covering the employment of direct fires and maintain strict situational understanding of friendly force locations.

SECTION VII – BATTLEFIELD OBSCURATION

3-132. Obscuration mission planning and execution can occur during the offense and the defense and can be very effective. Firing smoke on enemy positions can degrade the vision of gunners and known or suspected observation posts (OPs), preventing them from seeing or tracking targets and, thereby, reducing their effectiveness. When employed against an attacking force, white phosphorous (WP) can cause confusion and disorientation by degrading the enemy's command and control capabilities, while friendly units retain the ability to engage the enemy using thermal sights and range cards. Enemy vehicles become silhouetted as they emerge from the smoke. If smoke employment is planned and executed correctly, this occurs as the enemy reaches the trigger line.

PLANNING CONSIDERATIONS

3-133. Obscuration missions are important functions for mortars. Smoke missions must be planned well in advance so that the mortar carriers are loaded with a sufficient number of smoke rounds.

3-134. Atmospheric stability, wind velocity, and wind direction are the most important factors when planning target effects for smoke and WP mortar rounds. The effects of atmospheric stability can determine whether mortar smoke is effective at all or, if effective, how much ammunition is needed.

3-135. The terrain in the target area affects smoke and WP rounds. If the terrain in the target area is swampy, rain-soaked, or snow-covered, then burning smoke rounds may not be effective. These rounds produce smoke by ejecting felt wedges soaked in phosphorus. These wedges then burn on the ground, producing a dense, long-lasting cloud. If the wedges fall into mud, water, or snow, they can extinguish. Shallow water can reduce the smoke produced by these rounds by as much as 50 percent. The terrain in the target area affects bursting WP rounds little, except that deep snow and cold temperatures can reduce the smoke cloud by about 25 percent.

EMPLOYMENT CONSIDERATIONS

3-136. The vehicle smoke grenade launchers can provide a screening, incendiary, marking, and casualty-producing effect. They're often used while retrograding from a BP while in enemy contact. It produces a localized, instantaneous smoke cloud by scattering burning WP particles. The 120-mm heavy mortar and 81-mm medium mortar WP and red phosphorus rounds produce a long-lasting and wide area smoke screen and can be used for incendiary effects, marking, obscuring, screening, and casualty producing. The 60-mm lightweight company mortar WP round can be used as a screening, signaling, and incendiary agent. All mortar smoke rounds can be used as an aid in target location and navigation.

SECTION VIII – TRANSITIONS

3-137. The tank platoon halts an offensive task when they accomplish the mission, culminates, or receives a change in mission from higher HQ. The platoon conducts consolidation and reorganization to ensure that it is prepared to destroy an enemy counterattack or is prepared to resume the attack as soon as possible.

CONSOLIDATION

3-138. Consolidation is the process of organizing and strengthening a newly captured position so it can be defended. Normally, the attacking unit tries to exploit its success regardless of the type of assault. In some situations, however, the unit may have to consolidate its gains. Consolidation may vary from a rapid repositioning of forces and security elements on the objective, to a reorganization of the attacking force, to the organization and detailed improvement of positions for defensive missions.

3-139. Consolidation includes actions taken to secure the objective and defend against an enemy counterattack. Leaders use TLP to plan and prepare for this phase of operation. They ensure the unit is ready to conduct the following actions that usually are part of consolidation:

- Eliminate enemy resistance on the objective.
- Establish security beyond the objective by securing areas that may be the source of enemy direct fires or enemy artillery observation.
- Establish additional security measures such as OPs and patrols.
- Prepare for and help the passage of follow-on forces (if required).
- Continue to improve security by conducting other necessary defensive actions. These defensive actions include EA development, direct fire planning, and BP preparation.
- Adjust final protective fires and register targets along likely mounted and dismounted avenues of approach.
- Protect the obstacle reduction effort.
- Secure enemy detainees.
- Prepare for enemy counterattack.

REORGANIZATION

3-140. Reorganization usually is conducted concurrently with consolidation. It includes actions taken to prepare units for follow-on operations. As with consolidation, unit leaders plan and prepare for reorganization as they conduct TLP. Unit leaders ensure the following actions are conducted:

- Provide essential medical treatment and evacuate casualties as necessary.
- Treat and evacuate wounded detainees and process the remainder of detainees.
- Cross-level personnel and adjust task organization as required to support the next phase or mission.

- Conducts resupply operations, including rearming and refueling.
- Redistribute ammunition.
- Conduct required maintenance.

CONTINUING OPERATIONS

3-141. For all offensive tasks, tank platoons must plan to exploit success. However, at the conclusion of an engagement, the unit may be forced to defend. For short defenses, units make use of existing terrain to enhance their survivability. If a longer defense is envisioned, engineer assets should immediately refocus their efforts on providing survivability support (BPs and similar activities). Engineer assets should do this even as they sustain mobility and integrate countermobility into the planned defensive mission. The platoon leader/*platoon commander* considers the higher commander's concept of the operation, friendly capabilities, and enemy situation when making the decision to defend or continuing the offense.

TRANSITION TO THE DEFENSE

3-142. As offensive tasks approach a culmination point, the unit leader could order a transition to defensive tasks. The leader can use two basic techniques when transitioning to the defense. The first technique is leading elements to commit forces and push forward to claim enough ground to establish a security area anchored on defensible terrain. The second technique is to establish a security area generally along the unit's final positions, moving the main body rearward to defensible terrain.

3-143. Tank platoons anticipating the termination of unit offensive tasks prepare orders including the time or circumstances under which the current offensive task transitions to a defensive-focused mission, the missions and locations of subordinate units, and mission command measures. As the unit transitions from an offensive to a defensive focus, the leader takes the following actions:

- Maintains contact and surveillance of the enemy, using a combination of reconnaissance units and surveillance assets to develop the information required to plan future actions.
- Establishes a security area and local security measures.
- Redeploys forces based on probable future employment.
- Maintains or regains contact with adjacent units in a contiguous AO and ensures units remain capable of mutual support in a noncontiguous AO.
- Request engineer assets to shift the emphasis from mobility to countermobility and survivability.
- Consolidates and reorganizes.

TRANSITION TO STABILITY

3-144. As an offensive task approaches culmination, or upon order from higher HQ, the tank platoon could receive orders to transition to stability focused missions. These tasks establish a safe, secure environment facilitating reconciliation among local or

regional threat. Stability tasks aim to establish conditions supporting the transition to legitimate host-nation governance, a functioning civil society, and a viable market economy. The tank platoon leader/*platoon commander* must ensure contingencies are planned to transition quickly from offense to stability and vice versa.

3-145. Subordinate leaders must be fully trained to recognize activities initiating this transition. Actions in one unit's AO can affect whatever type operation an adjacent unit is conducting. For example, an offensive task may cause noncombatants to be displaced to another section of the city creating a humanitarian assistance mission for the unit in the AO.

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Chapter 4

Defense

The purpose of the defense is to defeat an enemy attack, gain time, economize forces, and develop conditions favorable for offensive or stability tasks. (Refer to ADP 3-90 for more information.) Normally, the defense alone cannot achieve a decision. However, it can set conditions for a counteroffensive or counterattack that enables Army forces to regain the initiative. Other reasons for conducting defensive tasks include—retain decisive terrain or deny a vital area to the enemy, attrit or fix the enemy as a prelude to the offense, counter surprise action by the enemy, or to increase the enemy’s vulnerability by forcing the enemy commander to concentrate subordinate forces. This chapter covers basics of the defense, common defensive planning considerations, forms of the defense, EA development, and transitions.

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SECTION I – BASICS OF THE DEFENSE

4-1. The tank platoon uses the defense to occupy and prepare positions to mass the effects of direct fires on likely avenues of approach or mobility corridors within the limits of their capabilities.

Note. METT-TC considerations determine the characteristics, placement, and movement and maneuver of defensive positions. Refer to chapter 2 for a complete discussion on METT-TC.

CHARACTERISTICS OF THE DEFENSE

4-2. Characteristics of the defense are disruption, flexibility, maneuver, mass and concentration, operations in-depth, preparation, and security. (Refer to ADP 3-90 for more information.)

DISRUPTION

4-3. The tank platoon disrupts the attacker's tempo and synchronization with actions designed to prevent massing of combat power unhinge preparations and, ultimately, the attack itself. Methods include defeating or misdirecting enemy reconnaissance forces, breaking up their formations, isolating their units, and attacking or disrupting their systems.

FLEXIBILITY

4-4. The platoon increases flexibility by conducting thorough reconnaissance and mounted rehearsals of all possible plans. A crucial indicator of the platoon's flexibility is its ability to move quickly, and under all battlefield conditions, between primary, alternate, and supplementary fighting positions as well as subsequent and supplementary BPs.

MANEUVER

4-5. Maneuver allows the defender to take full advantage of the AO and to mass and concentrate when desirable. Maneuver, through movement in combination with fire, allows the defender to achieve a position of relative advantage over the enemy to accomplish the mission. It also encompasses defensive actions such as security and support area operations.

MASSING AND CONCENTRATION

4-6. Platoons achieve mass and concentration by maximizing the number of tanks that can fire into an EA or that can move from primary positions to alternate and supplementary positions to concentrate fires on the enemy. To obtain an advantage at decisive points, defenders economize and accept risk in some areas, maneuvering to gain local superiority at the decisive point. Obstacles, security forces, and fires can help in reducing risk.

OPERATIONS IN-DEPTH

4-7. Simultaneous application of combat power throughout the AO improves the chances for success while minimizing friendly casualties. Quick, violent, and simultaneous action throughout the depth of the defender's AO can hurt, confuse, and even paralyze an enemy force just as it is most exposed and vulnerable. Such actions can weaken the enemy's will and may not allow early enemy successes. In-depth planning prevents the enemy from gaining momentum in the attack. Synchronization of decisive, shaping, and sustaining operations facilitates mission success.

PREPARATION

4-8. The defense has inherent strengths. The defender arrives in the AO before the attacker and uses the available time to prepare. These preparations multiply the defense's effectiveness. Preparations end only when the defenders retrograde or begin to fight. Until then, preparations are continuous. Preparations in-depth continue, even as the close fight begins.

SECURITY

4-9. Security helps deceive the enemy as to friendly locations, strengths, and weaknesses. It also inhibits or defeats enemy reconnaissance. Security measures provide early warning and disrupt enemy attacks early and continuously.

DEFENSIVE TASKS

4-10. There are three basic defensive tasks: area defense, mobile, and retrograde. Each contains elements of the others and usually contains static and dynamic aspects. Tank platoons serve as the primary maneuver element for the Armor company team. (Refer to ATP 3-90.1 for more information.)

4-11. As part of a defense, the tank platoon can defend, delay, withdraw, counterattack, and perform security tasks. The tank platoon usually defends as part of the Armor and mechanized Infantry company's defense in the main battle area to:

- Gain time.
- Retain essential terrain.
- Support other operations.
- Preoccupy the enemy in one area while friendly forces attack in another.
- Attrit enemy forces at a rapid rate while reinforcing friendly operations.

AREA DEFENSE

4-12. An area defense concentrates on denying enemy forces access to designated terrain for a specific time rather than destroying the enemy outright. The focus is on retaining terrain where the bulk of the defending force positions itself in mutually supporting positions and controls the terrain between positions.

Forms of Defensive Maneuver

4-13. Two forms of defensive maneuver within an area defense are defense in-depth and forward defense. The tank platoon is expected to do both. Commanders usually select the type of area defense to use, and the higher commander often defines the general defensive scheme for the Armor company. The specific mission may impose constraints such as time, security, and retention of certain areas that are significant factors in determining how the company (and platoon) will defend.

Defense In-Depth

4-14. Defense in-depth reduces the risk of the attacking enemy quickly penetrating the defense. The enemy is unable to exploit a penetration because of additional defensive positions employed in-depth (see figure 4-1). The in-depth defense provides more space and time to defeat the enemy attack.

4-15. The tank platoon participates in a defense in-depth when—

- The mission allows the tank platoon to fight throughout the depth of the AO.
- The terrain does not favor a defense well forward, and better defensible terrain is available deeper in the AO.
- Sufficient depth is available in the AO.
- Cover and concealment forward in the AO is limited.
- Weapons of mass destruction may be used.

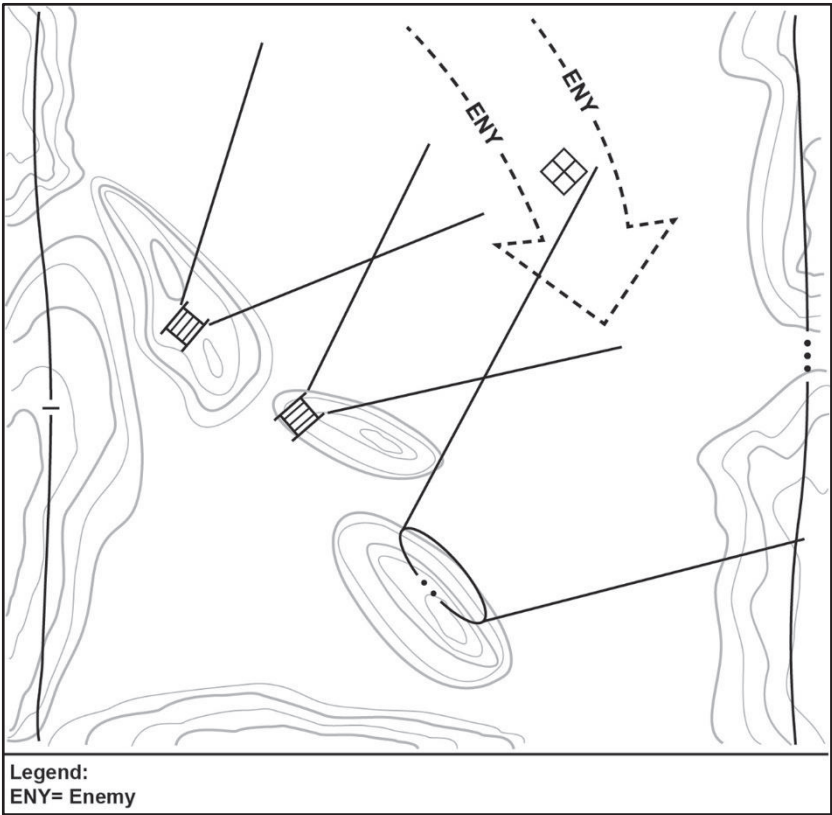


Figure 4-1. Platoon defense in-depth

Forward Defense

4-16. The intent of a forward defense is to prevent enemy penetration into the defensive area (see figure 4-2). Forward defense is used when a lack of depth (terrain) is present in the AO. The tank platoon deploys its combat power into forward defensive positions near the forward edge of the battle area. While the company may lack depth, the platoon must strive to build depth into the defense at their level. The leader fights to retain the forward position, and may conduct counterattacks against enemy penetrations, or to destroy enemy forces in the forward EA. Often, counterattacks are planned forward of the forward edge of the battle area to defeat the enemy.

4-17. The tank platoon uses a forward defense when—

- Terrain forward in the AO favors the defense.
- Strong existing natural or manmade obstacles, such as rivers, are located forward in the AO.
- The assigned AO lacks depth due to location of the area or facility to be protected.
- Cover and concealment in rear portions of the AO is limited.
- Directed by higher HQ to retain or initially control forward terrain.

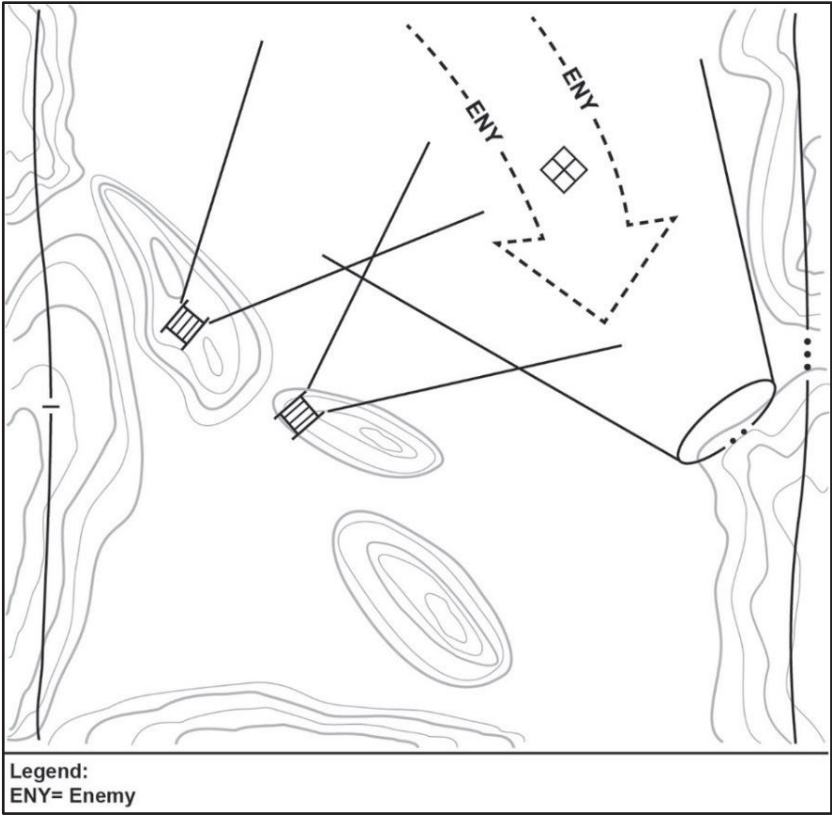


Figure 4-2. Platoon forward defense

MOBILE DEFENSE

4-18. Mobile defense concentrates on destruction or defeat of the enemy through a decisive attack by a striking force. Units smaller than a division usually do not conduct a mobile defense because of the inability to fight multiple engagements throughout the width, depth, and height of their AO, while simultaneously resourcing the striking, fixing, and reserve forces. Mobile defenses focus on defeating or destroying the enemy by allowing enemy forces to advance to a point where they are exposed to a decisive counterattack by the striking force.

4-19. Tank platoons’ missions in a mobile defense are similar to missions in area defense and offensive missions. As part of the fixing force, platoons defend within their AO, which might be larger than usual. As part of the striking force, tank platoons plan, rehearse, and execute offensive tasks. Platoons use the term “striking force” rather than the term “reserve” because “reserve” indicates an uncommitted force. The striking force is a committed force that has the resources to conduct a decisive counterattack as part of the mobile defense.

RETROGRADE

4-20. Retrograde is a defensive task involving organized movement away from the enemy. The enemy may force a retrograde or the leader may execute it voluntarily. In either case, the higher commander of the force executing the operation must approve retrograding.

4-21. Retrogrades are conducted to improve a tactical situation or preventing one from deteriorating. Platoons usually conduct retrogrades as part of a larger force but may conduct independent retrogrades as required. Retrograde operations can accomplish the following:

- Resist, exhaust, and defeat enemy forces.
- Draw the enemy into an unfavorable situation.
- Avoid contact in undesirable conditions.
- Gain time.
- Disengage a force from battle for use elsewhere for other missions.
- Reposition forces, shorten lines of communication, or conform to movements of other friendly units.
- Secure favorable terrain.

4-22. The three forms of retrograde are—

- Delay.
- Withdrawal.
- Retirement.

Delay

4-23. Delays allow units to trade space for time to avoid decisive engagement and safeguard its forces. Ability of a force to trade space for time requires depth in the AO assigned to the delaying force. The amount of depth required depends on several factors, including the—

- Amount of time to be gained.
- Relative combat power of friendly and enemy forces.
- Relative mobility of forces.
- Nature of terrain.
- Ability to shape AO with obstacles and fires.
- Degree of acceptable risk.

4-24. Delays succeed by forcing the enemy to concentrate forces to fight through a series of defensive positions. Delaying forces displace to subsequent positions before the enemy is able to concentrate sufficient resources to decisively engage and defeat delaying forces in current positions.

4-25. Parameters of the delay are specified in the OPORD for a delay mission. First, leaders direct one of two alternatives: delay in the AO or delay forward of a specified line or terrain feature for a specified time. The second parameter in the order must

specify acceptable risk. The order must specify whether the delaying force may use the entire AO or must delay from specific BPs. A delay using the entire AO is preferable, but a delay from specific positions may be required to coordinate between two or more units. Leaders use obstacles, fires, and movement throughout the depth of the AO.

4-26. If the leader plans the delay to only last a short time or the AO's depth is limited, delaying units may be forced to fight from a single set of positions. If the leader expects the delay to last for longer periods, or sufficient depth is available, delaying units may delay from either alternate or successive positions. In both techniques, delaying forces normally reconnoiter subsequent positions before occupying them, if possible, and post guides on one or two subsequent positions. Additionally, in executing both techniques, it is critical the delaying force maintains contact with the enemy between delay positions. Table 4-1 summarizes the advantages and disadvantages of the two techniques (see figures 4-3 and 4-4 on pages 4-11 and 4-12 for examples of the delay).

Table 4-1. Advantages and disadvantages of delay techniques

<i>METHOD OF DELAY</i>	<i>USE WHEN</i>	<i>ADVANTAGES</i>	<i>DISADVANTAGES</i>
Delay from Subsequent Positions	<ul style="list-style-type: none"> • Area of operations is wide • Forces available do not allow themselves to be split 	<ul style="list-style-type: none"> • Masses fires of all available combat elements 	<ul style="list-style-type: none"> • Limited depth to the delay positions • Less available time to prepare each position • Less flexibility
Delay from Alternate Positions	<ul style="list-style-type: none"> • Area of operations is narrow • Forces are adequate to be split between different positions 	<ul style="list-style-type: none"> • Allows positioning in-depth • Provides best security on most dangerous avenue of approach • Allows more time for equipment and Service member maintenance • Increases flexibility 	<ul style="list-style-type: none"> • Requires more forces • Requires continuous maneuver coordination • Requires passage of lines • Engages only part of the force at one time • Risk losing contact with enemy between delay positions

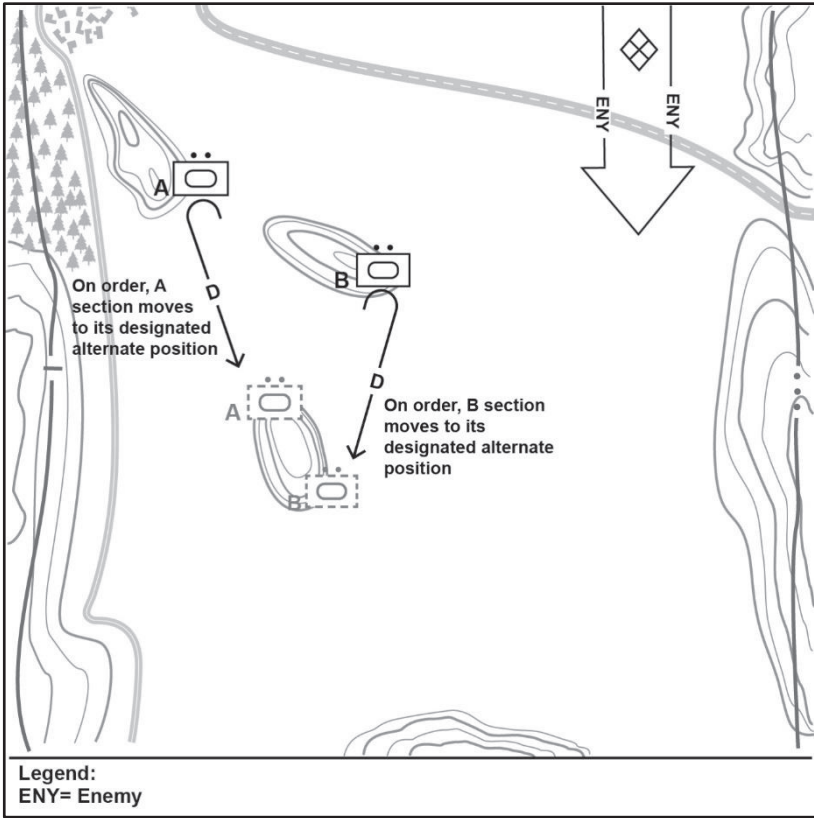


Figure 4-3. Delay from alternate positions

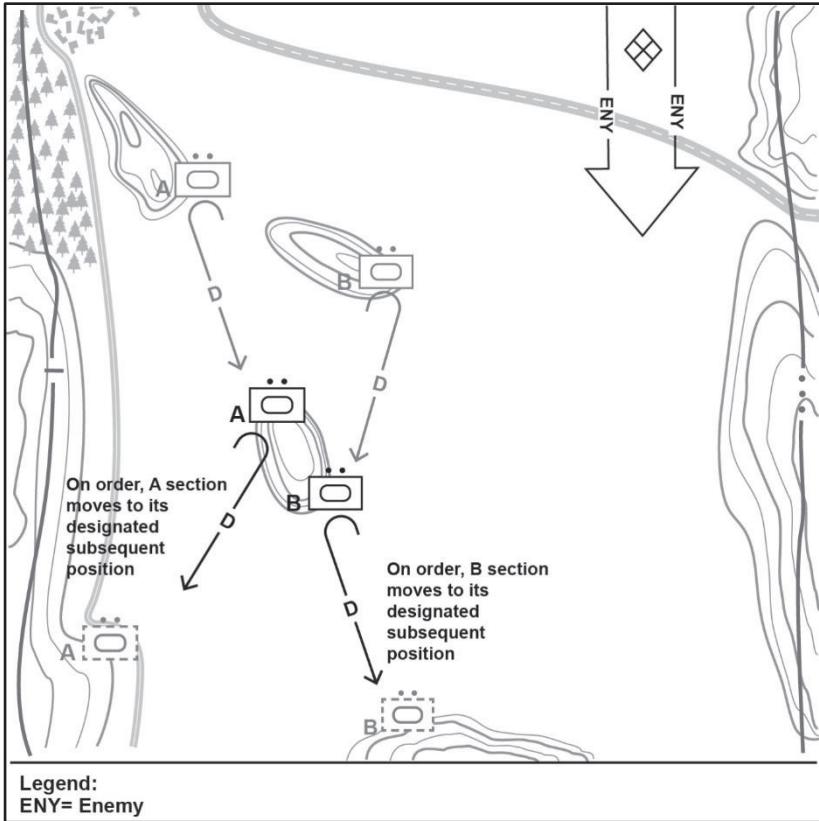


Figure 4-4. Delay from subsequent positions

Withdrawal

4-27. Withdrawal is a planned retrograde operation in which a force in contact disengages from an enemy force and moves in a direction away from the enemy. (See ADP 3-90 for more information). Although the leader avoids withdrawing from action under enemy pressure, it is not always possible. Withdrawal is used to preserve the force or release it for a new mission.

4-28. Withdrawals are inherently dangerous because they involve moving units to the rear and away from what is usually a stronger enemy force. The heavier the previous contact and closer the enemy is relative to the platoon, the more difficult the withdrawal. Units usually confine rearward movement to times and conditions when the advancing enemy forces cannot observe the activity or easily detect the operation. Operations security (OPSEC) is extremely important, especially during the initial stages of a delay when most of the functional and sustainment forces displace.

4-29. The leader plans and coordinates a withdrawal in the same manner as a delay. METT-TC applies differently because of differences between a delay and withdrawal.

A withdrawal begins under the threat of enemy interference. Because the force is most vulnerable when the enemy attacks, the leader plans for a withdrawal under pressure. The leader then develops contingencies for a withdrawal without pressure. In both cases, the leader's main considerations are to—

- Plan a deliberate break from the enemy.
- Displace the main body rapidly, free of enemy interference.
- Safeguard withdrawal routes.
- Retain sufficient maneuver, functional or multifunctional support, and sustainment capabilities throughout the operation.

4-30. Withdrawals may be assisted or unassisted. Leaders prefer to conduct a withdrawal while not under enemy pressure and without assistance, but at times assistance is necessary. During an assisted withdrawal, the assisting force occupies positions to the rear of the withdrawing unit and prepares to accept control of the situation. The withdrawing unit may conduct a rearward passage of lines through the assisting unit (see section VIII of chapter 7 for more information). Both forces closely coordinate the withdrawal. A withdrawing force can receive assistance from another force as—

- Additional security for the area through which the withdrawing force will pass.
- Information concerning withdrawal routes (reconnaissance and maintenance).
- Forces to secure choke points or key terrain along withdrawal routes.
- Elements to help in movement control, such as traffic control post.
- Required maneuver, direct fire support, and sustainment, which can involve conducting a counterattack to help the withdrawing unit in disengaging from the enemy.

4-31. During an unassisted withdrawal, the withdrawing unit establishes routes and develops plans for the withdrawal. In an unassisted platoon withdrawal, the platoon leader/*platoon commander* may designate one section as the detachment left in contact while the other section withdraws. As the platoon withdraws, the detachment left in contact disengages from the enemy and follows the previously displaced section to its final destination. Figure 4-5 shows an example of an unassisted withdrawal.

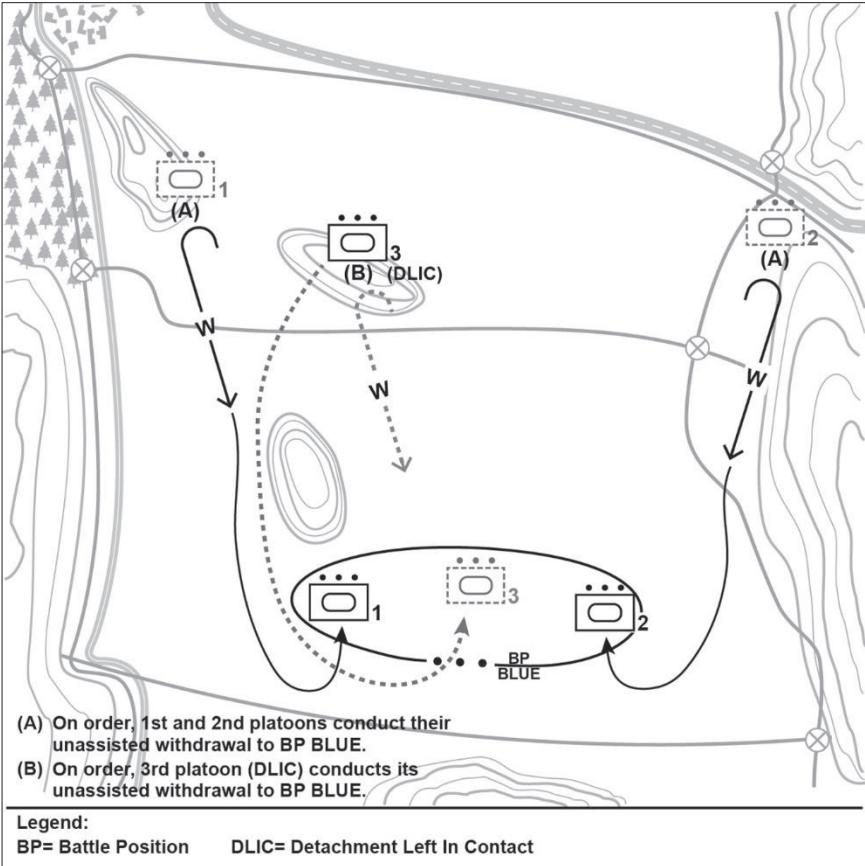


Figure 4-5. Platoon unassisted withdrawal

Retirement

4-32. **Retirement** is a form of retrograde in which a force out of contact moves away from the enemy (ADP 3-90). A retiring unit organizes for combat operations but does not anticipate interference by enemy ground forces. Typically, another unit provides security to cover the movement of one formation as it conducts a retirement. However, mobile enemy forces, unconventional forces, air strikes, air assaults, or long-range fires may attempt to interdict the retiring unit. The leader plans for enemy actions and organizes the unit to fight in self-defense. The leader usually conducts retirement to

reposition the forces for future operations or to accommodate the current concept of the operation. Units conduct retirements such as tactical road marches where security and speed are the most important considerations. (Refer to chapter 7 of this publication for more information.)

ORDER OF EVENTS

4-33. Usually, as part of a larger element, the tank platoon conducts the defense performing several integrated and overlapping activities. As the platoon leader/*platoon commander* plans the defense, this order of events is generally followed:

- Reconnaissance and security operations.
- EA development.
- Occupation and preparation.
- Approach of the enemy main attack.
- Enemy assault.
- Counterattack.
- Consolidation and reorganization.

RECONNAISSANCE AND SECURITY OPERATIONS

4-34. Security forces must protect friendly main battle area forces to allow them to prepare their defense. These security forces work in conjunction with and complement company and battalion security operations. The enemy will attempt to discover the defensive scheme of maneuver using reconnaissance elements and attacks by forward detachments and disruption elements. It also tries to breach the platoon's tactical obstacles.

4-35. The security force often includes friendly reconnaissance elements, but a tank platoon may be tasked to augment the security force. The security force's goals normally include providing early warning, destroying enemy reconnaissance units, and impeding and harassing enemy assault elements. The security force continues its mission until directed to displace. The commander also may use security forces in the deception effort to give the illusion of strength in one area while establishing the main defense in another.

ENGAGEMENT AREA DEVELOPMENT

4-36. The **engagement area** is where the commander intends to contain and destroy an enemy force with the massed effects of all available weapons and supporting systems (FM 3-90-1). Leaders combine natural and manmade obstacles to canalize the attacking force into EAs. The success of engagements depends on how the leader can integrate the obstacle plan, indirect fire plan, and direct fire plan within the EA to achieve the tank platoon's tactical purposes.

OCCUPATION AND PREPARATION

4-37. A leader's reconnaissance is critical for the platoon to conduct occupation without hesitation and begin priorities of work. The platoon leader/*platoon commander*, tank commanders, and a security element (usually the loaders from the wingman tanks) dismount and move to the BP. If possible, platoon vehicles provide overwatch for the reconnaissance group; otherwise, the platoon leader/*platoon commander* positions dismounted OPs, as necessary. The goals are, but are not limited to, identification of enemy avenues of approach, EA, sectors of fire, the tentative obstacle plan, indirect fire plan, OP, rally point and command post locations.

4-38. Members of the reconnaissance party should use marking materials (for daylight and limited visibility recognition) to indicate key locations. They should record the eight-digit grid coordinates for these locations, either manually on their maps or by using electronic means such as the Global Positioning System (GPS) or positioning and navigation system (known as POSNAV) if available. OPSEC is critical during the occupation to ensure the platoon avoids detection and maintains combat power for the actual defense. Each tank crew must be able to execute the occupation quickly and efficiently to maximize the time available for planning and preparation of the defense.

APPROACH OF THE ENEMY MAIN ATTACK

4-39. The platoon engages the enemy at a time and place where direct and indirect fire systems are maximized to achieve success within the designated AO. If available, higher friendly forces may initiate close air support as the enemy's assault force approaches the EA. Friendly forces occupy their actual defensive positions based on pre-established triggers, such as the enemy reaching direct fire range.

ENEMY ASSAULT

4-40. During an assault, the enemy deploys to achieve mass at a designated point, normally employing assault and support forces. This may leave the enemy vulnerable to the combined effects of friendly direct and indirect fires and integrated obstacles. The enemy may employ additional forces to fix friendly elements and prevent their repositioning. Friendly counterattack forces might be committed against the enemy flank or rear, while other friendly forces may displace to alternate, supplementary, or subsequent positions to support the commander's scheme of maneuver. The enemy is likely to use artillery, close air support, and CBRN weapons to set the conditions for the assault.

4-41. The platoon engages the enemy. Tank commanders control their direct fires by using fire commands (see appendix A). Destroyed vital positions are reoccupied. Tanks move to alternate positions if the primary positions become untenable or if ordered to do so. Under limited visibility conditions, mortar and field artillery (FA) units may fire infrared illumination if the enemy has not yet identified the defenders' positions. Once the platoon engages the enemy from its primary positions, regular illumination is used.

4-42. When required, final protective fires are initiated. This is a preplanned barrier of direct and indirect fires designed to impede enemy movement across defensive lines or

areas. The commander generally initiates final protective FA and heavy mortar fires, which suppress the enemy final assault until ordered to cease-fire or having exhausted their ammunition.

COUNTERATTACK

4-43. As the enemy’s momentum slows or stops, friendly forces may conduct a counterattack. The counterattack might be for offensive purposes to seize the initiative from the enemy. In some cases, the purpose of the counterattack is mainly defensive such as reestablishing a position or restoring control of the sector.

CONSOLIDATION AND REORGANIZATION

4-44. The platoon secures its defensive area by repositioning forces, destroying remaining enemy elements, processing detainees, and reestablishing obstacles. The platoon conducts all necessary sustainment functions as it prepares to continue the defense. Even when enemy forces are not actively engaging it, the platoon maintains awareness of the tactical situation and local security at all times. The platoon prepares itself for possible follow-on missions.

COMMON DEFENSIVE CONTROL MEASURES

4-45. The platoon leader/*platoon commander* controls defensive tasks by using control measures to provide flexibility for subordinates to respond to changes in the situation and to concentrate combat power at the decisive point. Defensive control measures in the AO include, but are not limited to:

- BHL—a designated PL on the ground where responsibility transitions from the stationary force to the moving force and vice versa.
- Forward edge of the battle area— the foremost limits of a series of areas in which ground combat units are deployed, excluding the areas in which the covering or screening forces are operating, designated to coordinate fire support, the positioning of forces, or the maneuver of units.
- Main battle area—the area in a defense where the leader intends to deploy the bulk of the unit’s combat power and conduct decisive operations to defeat an attacking enemy.
- Direct fire control and fire support coordination measures to synchronize the employment of combat power.
- Disengagement lines to trigger the displacement of subordinate forces.

BATTLE POSITIONS

4-46. A BP is a defensive location oriented on a likely enemy avenue of approach (ADP 3-90). Units as large as battalion task forces and as small as sections use BPs. They may occupy the topographical crest of a hill, a forward slope, a reverse slope, or a combination of all areas. The leader selects the positions based on terrain, enemy

capabilities, and friendly capabilities. A leader can assign all or some subordinates BPs in the AO. The types of BPs are—

- Primary.
- Alternate.
- Supplementary.
- Subsequent.
- Strong point.

Note. (PTSEARS is a mnemonic designed for hasty BP establishment)

- Primary, alternate, supplementary BPs.
 - TRPs.
 - Sectors of fire.
 - EA.
 - Assign trigger and disengagement line.
 - Routes in and out of BP.
 - Subsequent BP.
-

Primary Position

4-47. A primary position covers the enemy's most likely avenue of approach into the area. It is the best position from which the platoon can cover an EA.

Alternate Position

4-48. An alternate position is a defensive position that is assigned when the primary position becomes untenable or unsuitable for carrying out the assigned task (see figure 4-6.) Alternate positions allow the defender to carry out the original task. The following considerations apply for an alternate BP:

- It covers the same avenue of approach or sector of fire as the primary BP.
- It is located slightly to the front, flank, or rear of the primary BP.
- It may be positioned forward of the primary BP during limited visibility operations.

Supplementary Position

4-49. A supplementary position is a defensive position located within a unit’s assigned AO that provides sectors of fire and defensible terrain along an avenue of approach that is not the enemy’s expected avenue of attack (see figure 4-6.) For example, an avenue of approach into a company’s AO from one of its flanks could require the company commander to direct platoons to establish supplementary positions to allow the platoons to engage enemy forces traveling along an avenue. The platoon leader/*platoon commander* formally assigns supplementary positions when the platoon must cover more than one avenue of approach.

Subsequent Position

4-50. A subsequent position is a position that the unit expects to move to during the course of the battle (ADP 3-90). A defending unit may have a series of subsequent positions (see figure 4-6). Subsequent positions also can have primary, alternate, and supplementary positions associated with them.

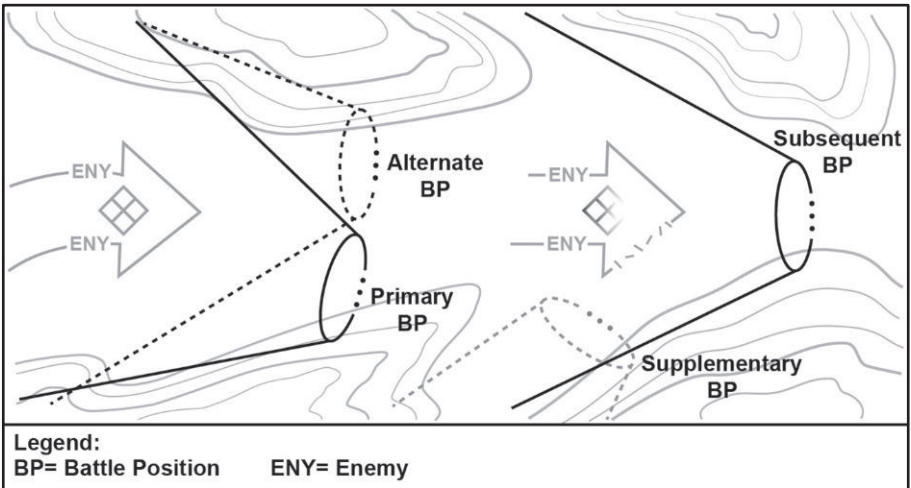


Figure 4-6. Primary, alternate, supplementary, and subsequent position

Strong point

4-51. A **strong point** is a heavily fortified battle position tied to a natural or reinforcing obstacle to create an anchor for the defense or to deny the enemy decisive or key terrain (ADP 3-90). The mission to create and defend a strong point implies retention of terrain to stop or redirect enemy formations. A strong point can also be used to canalize or contain enemy forces. Strong points require extensive time, engineer support, and Class IV (construction materials). Commanders do not normally establish strong points for a unit smaller than a company in size because a platoon or section cannot secure a perimeter large enough to encompass all required assets and supplies. However, a tank platoon may participate in a strong point defense.

SECTION II – ENGAGEMENT AREA DEVELOPMENT

4-52. At the platoon-level, EA development is a complex function demanding parallel planning and preparation if the platoon is to accomplish the myriad tasks for which it is responsible. Despite this complexity, EA development resembles a drill, and the platoon leader/*platoon commander* and the subordinate tank commanders use an orderly, standard set of procedures. The steps of EA development are not a rigid, sequential process. Steps 1 through 3 should be conducted in sequence, while steps 4 through 6 are conducted as METT-TC allows. Rehearsals (step 7) can be conducted throughout EA development.

4-53. Beginning with evaluation of METT-TC, the EA development process is as follows:

- Step 1—Identify all likely enemy avenues of approach.
- Step 2—Determine likely enemy schemes of maneuver.
- Step 3—Determine where to kill the enemy.
- Step 4—Plan and integrates obstacles.
- Step 5—Emplace weapon systems (direct fire).
- Step 6—Plan and integrate indirect fires.
- Step 7—Rehearse the execution of operations in the EA.

Note. Figures 4-7 through 4-12 on pages 4-21 through 4-27 build on one another to demonstrate the EA development process.

IDENTIFY LIKELY ENEMY AVENUES OF APPROACH

4-54. Procedures and considerations when identifying the enemy’s likely avenues of approach (see figure 4-7) include:

- Conduct initial reconnaissance. If possible, do this from the enemy’s perspective along each avenue of approach into the AO or EA.
- Identify key and decisive terrain. This includes locations affording positions of advantage over the enemy, and natural obstacles and choke points restricting forward movement.
- Determine what size force can travel through each available mobility corridor.
- Determine which avenues provide cover and concealment for the enemy while allowing the enemy to maintain their tempo.
- Determine what terrain the enemy is likely to use to support each avenue.
- Evaluate lateral routes adjoining each avenue of approach.

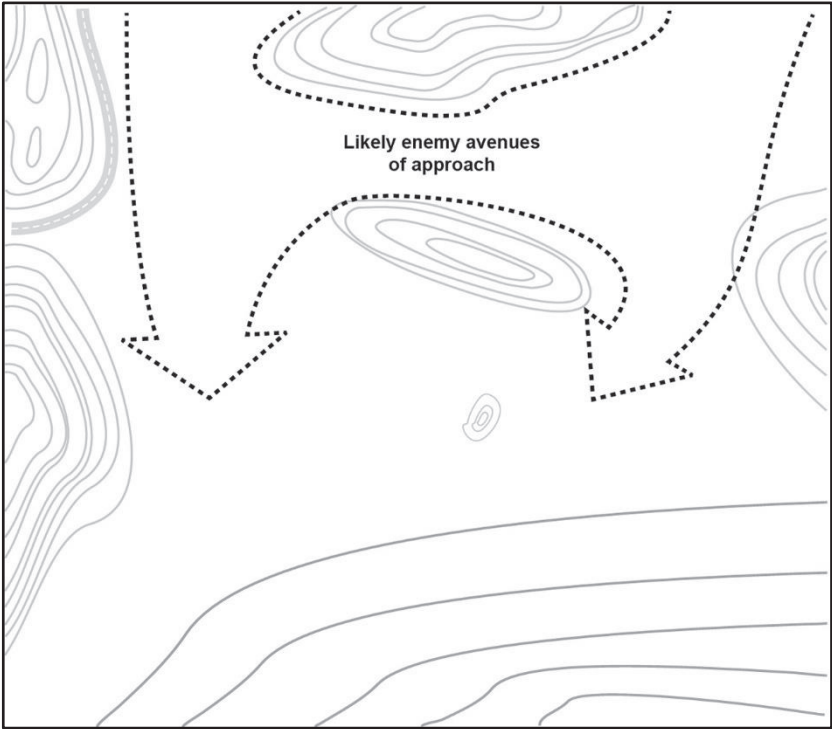


Figure 4-7. Likely enemy avenues of approach

DETERMINE THE ENEMY SCHEME OF MANEUVER

4-55. Procedures and considerations in determining the enemy's scheme of maneuver (see figure 4-8) include:

- Determine how the enemy will structure the attack.
- Determine how the enemy will use their reconnaissance assets. Will they attempt to infiltrate friendly positions?
- Determine where and when the enemy will change formations and establish support-by-fire positions.
- Determine where, when, and how the enemy will conduct their assault or breaching operations.
- Determine where and when they will commit follow-on forces.
- Determine the enemy's expected rates of movement.
- Assess the effects of the combat multipliers and anticipated locations or areas of employment.
- Determine what reactions the enemy is likely to have in response to projected friendly actions.

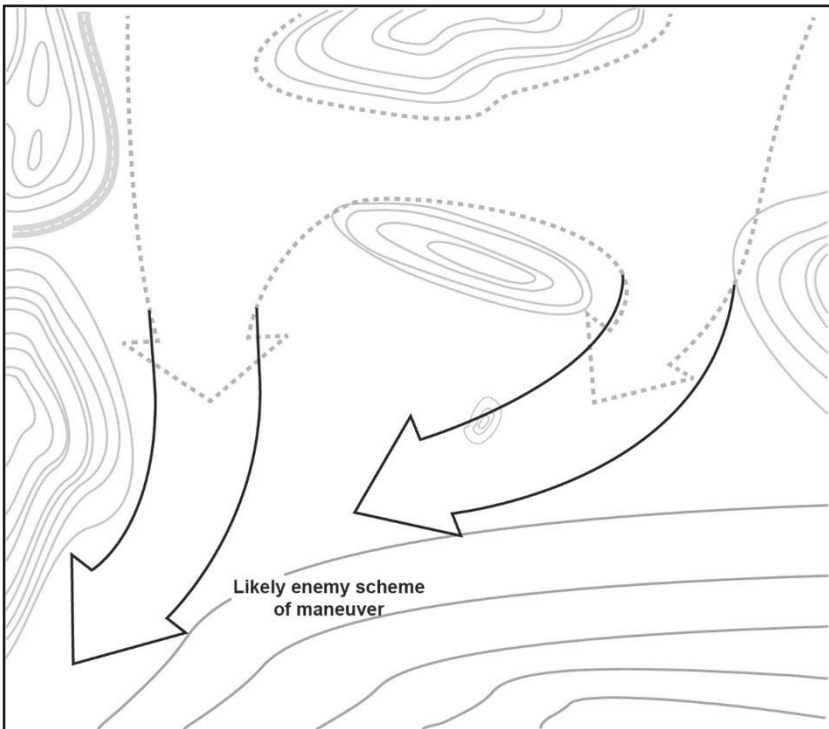


Figure 4-8. Example of an enemy scheme of maneuver

DETERMINE WHERE TO KILL THE ENEMY

4-56. The following steps apply in identifying and marking where the enemy engagement (see figure 4-9) is to occur:

- Identify TRP matching the enemy’s scheme of maneuver allowing the platoon to identify where it will engage enemy forces through the depth of the AO.
- Identify and record the exact location of each TRP.
- In marking TRP, use thermal sights to ensure visibility at the appropriate range under varying conditions, including daylight and limited visibility (darkness, smoke, dust, or other obscurants).
- Determine how many weapon systems will focus fires on each TRP to achieve the desired end state.
- Determine which element will mass fires on each TRP.
- Establish EAs around TRP.
- Develop the direct fire planning measures necessary to focus fires at each TRP.

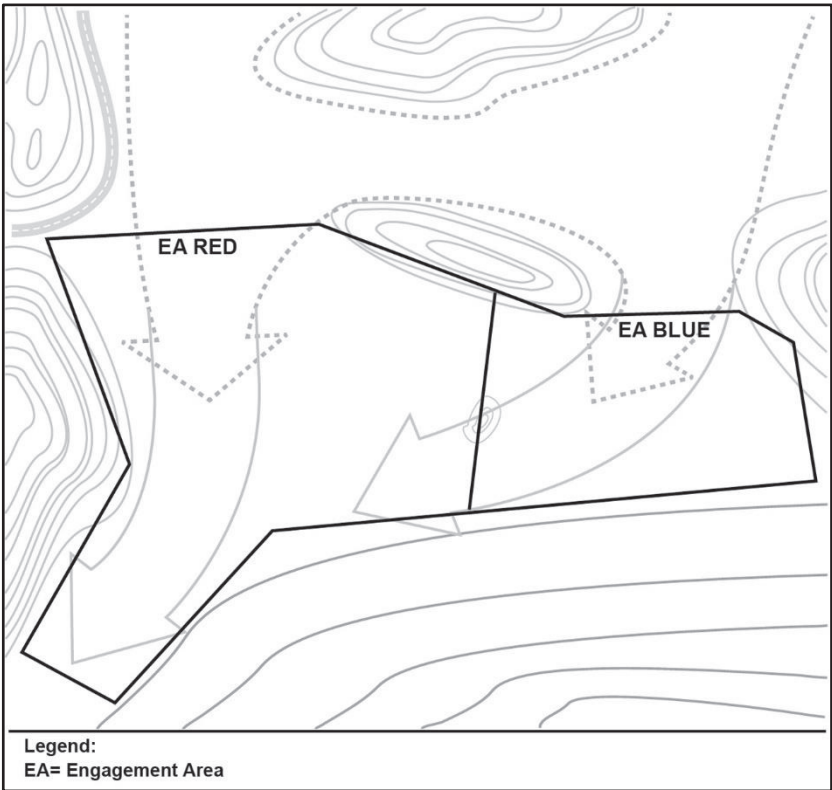


Figure 4-9. Locations to kill enemy

PLAN AND INTEGRATE OBSTACLES

4-57. The following steps apply in planning and integrating obstacles (see figure 4-10) during defensive missions:

- Determine the obstacle group purpose with the company commander and engineer platoon leader/platoon commander; confirm the target, relative location, and effect.
- In conjunction with the engineer platoon leader/platoon commander, identify location, dimension, and mark the obstacles within the obstacle group. Ensure intent supports the task force scheme of maneuver.
- Integrate protective obstacle types and locations within tank platoons defensive perimeter.
- Ensure coverage of all obstacles with direct fires and or indirect fires.
- Assign responsibility for guides and lane closure as required.
- According to METT-TC, help engineer platoon in emplacing obstacles, securing Class IV/V (construction materials/ammunition) point, and securing obstacle work sites.
- Coordinate engineer disengagement criteria, actions on contact, and security requirements with the engineer platoon leader/platoon commander at the obstacle work site.

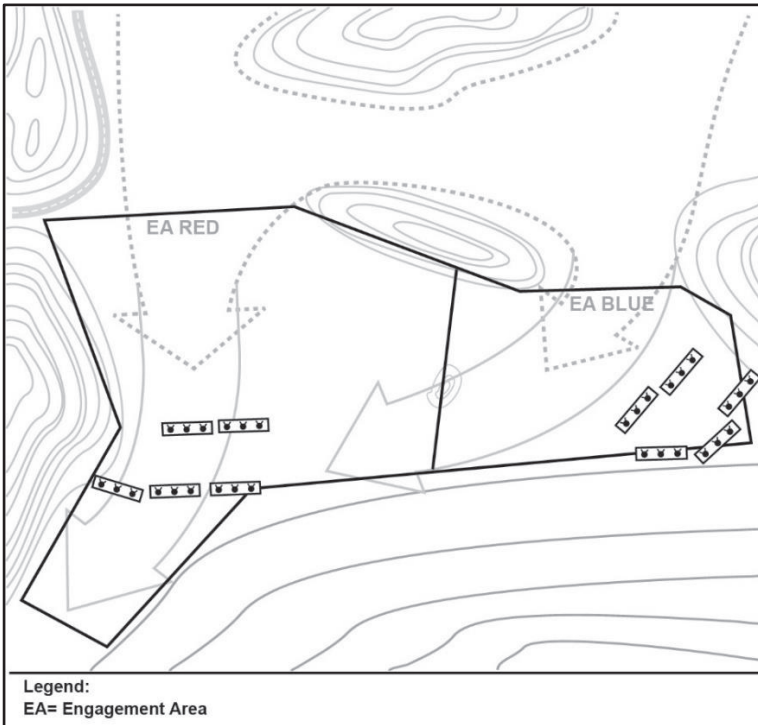


Figure 4-10. Plans for and integration of obstacles

EMPLACE WEAPON SYSTEMS

4-58. The following steps apply in selecting and improving BPs and emplacing the platoon vehicles (see figure 4-11 on page 4-26):

- Select tentative platoon BPs.

Note. When possible, select BPs while moving in the EA. Using the enemy's perspective enables the leader to assess survivability of positions.

- Conduct a leader's reconnaissance of the tentative BPs.
- Drive the EA to confirm selected positions are tactically advantageous.
- Confirm and mark the selected BPs.
- Ensure BPs do not conflict with those of adjacent units and are tied in with adjacent positions.
- Select primary, alternate, and supplementary fighting positions to achieve the desired effect for each TRP.
- Determine where to prestock ammunition where it can survive the enemy's preparatory fires and support the platoon's defense.
- Ensure vehicle commanders position systems so each TRP can be observed.
- Ensure positions allow tank commanders, loaders, and gunners to observe the EA; these positions should allow tanks engage enemy forces from the hull down position with the .50 caliber and loader's M240 machine gun.
- Stake vehicle positions according to unit SOPs so engineers can dig in the positions while vehicle crews perform other tasks.
- Confirm all vehicle positions.

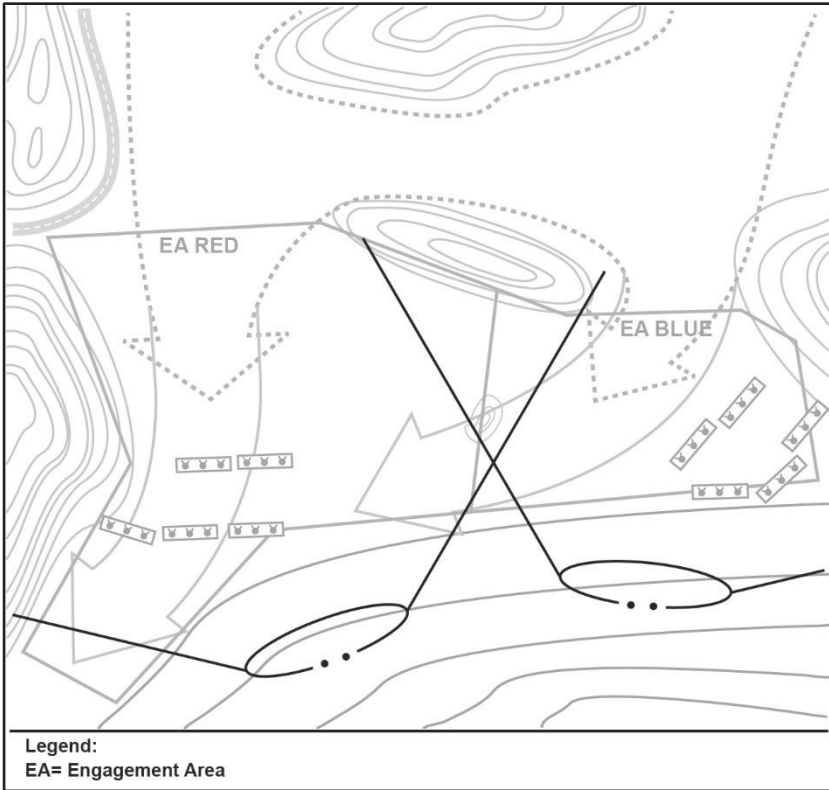


Figure 4-11. Emplacement of weapons systems

4-59. The platoon leader/*platoon commander* ensures overlapping sectors of fire and mitigates risk of dead space. This is accomplished through preplanned targets, repositioning of fighting positions, or coordination with higher or adjacent units.

PLAN AND INTEGRATE INDIRECT FIRES

4-60. The following steps apply in planning and integrating indirect fires (see figure 4-12):

- Determine the purpose of fires.
- Determine where effects will best be achieved.
- Establish the observation plan that includes—
- Redundancy for each target.
- Observers who will include the FIST, as well as members of the platoon with direct fire support execution responsibilities.
- Establish triggers based on enemy movement rates.
- Obtain accurate target locations using organic target location devices or survey/navigational equipment.
- Refine target locations to ensure coverage of obstacles.
- Plan final protective fires; coordinate through the company commander or fire support officer.
- Request critical friendly zone for protection of maneuver elements and no-fire areas for protection of OPs and forward positions.

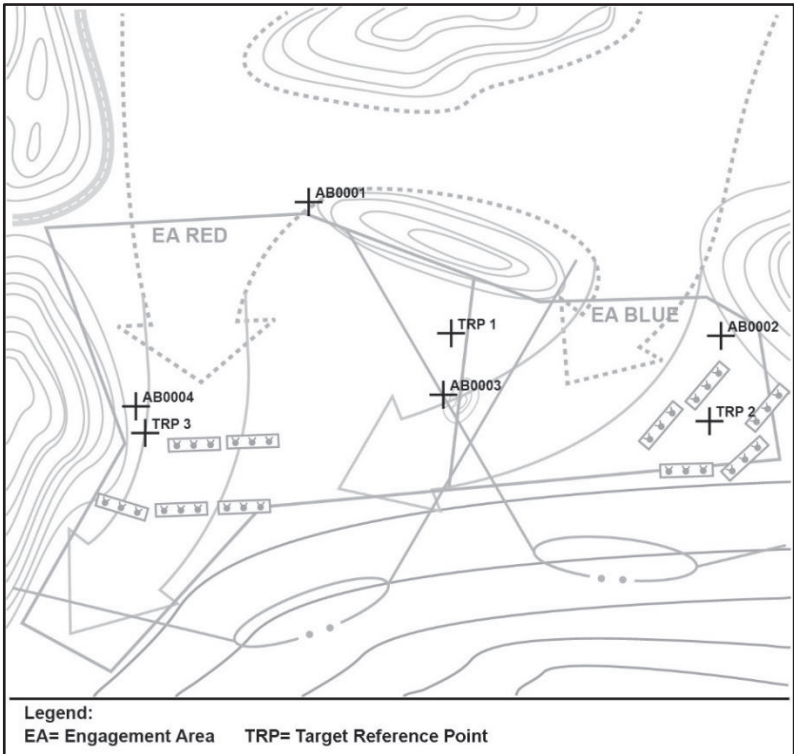


Figure 4-12. Integration of direct and indirect fires

REHEARSALS

4-61. The purpose of rehearsals is to ensure every leader and crewmember understands the plan and elements are prepared to cover their assigned areas with direct and indirect fires. The rehearsal should cover—

- Rearward passage of security forces (as required).
- Closure of lanes (as required).
- Movement from the hide position to the BP.
- Use of fire commands, triggers, and maximum engagement lines to initiate direct and indirect fires.
- Shifting of fires to refocus and redistribute fire effects.
- Disengagement and displacement criteria.
- Identification of displacement routes and times.
- Preparation and transmission of critical reports using radio and digital systems, as applicable.
- Assessment of the effects of enemy weapon systems.
- Displacement to alternate, supplementary, or subsequent BPs.
- Cross-leveling or resupply of Class V.
- Evacuation of casualties.
- Succession of command.

4-62. The platoon leader/*platoon commander* should coordinate rehearsals with higher HQ to ensure there are no conflicts with other units. Coordination leads to efficient use of planning and preparation time for all units involved with the operation. It eliminates dangers of misidentifying friendly forces in the rehearsal area, which could result in fratricide.

SECTION III – OCCUPATION ACTIVITIES

4-63. To use time efficiently, the platoon leader/*platoon commander* conducts occupation activities such as priority of work, adjacent unit coordination, internal coordination, and security. These activities can be accomplished concurrently.

PRIORITIES OF WORK

4-64. Priorities of work are a set method of controlling the preparation and conduct of a defense. Tactical SOPs should describe priorities of work, including individual duties. The platoon leader/*platoon commander* changes priorities based on the situation. All leaders in the platoon should have a specific priority of work for their duty position. The platoon leader/*platoon commander* manages the defensive preparation and division of work based on the no later than defend time. Priorities of work include, but are not limited to, the following:

- Maintain platoon OPSEC and surveillance of the EA.
- Verify each vehicle's location, orientation, and sector of fire.

- Supervise any allocated engineer assets.
- Providing security for the engineer assets.
- Conduct reconnaissance and mark supplementary EAs and subsequent BPs as time permits.
- Conduct rehearsals.
- Oversee vehicle maintenance and prepare-to-fire checks.
- Improve the position by emplacing M8/M22 alarms and by upgrading camouflage.

ADJACENT UNIT COORDINATION

4-65. The ultimate goal of adjacent unit coordination is to ensure unity of effort in accomplishment of the mission. Items adjacent units coordinate include—

- Unit positions, including locations of vital leaders' call signs and frequencies.
- Locations of OPs and patrols.
- Overlapping fires (to ensure direct fire responsibility is clearly defined).
- TRP.
- Alternate, supplementary, and subsequent BPs.
- Indirect fire information.
- Obstacles (location and type).
- Air defense considerations, if applicable.
- Routes to be used during occupation and repositioning.
- Sustainment considerations.

PLATOON COORDINATION

4-66. Effective platoon coordination enhances the situational awareness of tank crews and alerts them to the actions needed to prepare the defense. One method of ensuring coordination within the platoon is dissemination of enemy and friendly information as intelligence updates. In addition, sector sketches and the platoon fire plan allow coordination of fires before the fight begins. However, when time is extremely limited, digital coordination may be the only means of sending and receiving this information. The platoon leader/*platoon commander* should send and receive the following information using the radio or mission command system before conducting face-to-face coordination:

- Location of leaders.
- Location of fighting positions.
- Location of observations posts and withdrawal routes.
- Location and types of obstacles.
- Location, activities, and passage plan for scouts and other units forward of the platoon's position.

- Platoon's digital sector sketch.
- Location of all Service members and units operating in and around the platoon's AO.

4-67. Current techniques for coordination hold true for units that are digitally equipped. If a digitized and a nondigitized unit are conducting adjacent unit coordination, face-to-face is the preferred method. The leader of the digitized unit has the option to enter pertinent information about the nondigitized unit into mission command systems for later reference. The digitally equipped platoon leader/*platoon commander* should show the adjacent unit leader the digital sector sketch. If face-to-face coordination is not possible, leaders share pertinent information by radio.

SECURITY

4-68. Security in the defense includes all active and passive measures taken to avoid detection by the enemy, deceive the enemy, and deny enemy reconnaissance elements accurate information on friendly positions. In planning for the security in the defense, the platoon leader/*platoon commander* considers the military aspects of terrain OAKOC/*KOCSA*. The platoon leader/*platoon commander* uses the map to identify terrain that will protect the platoon from enemy observation and fires, while providing observation and fires into the EA. The platoon leader/*platoon commander* uses intelligence updates to increase situational understanding, reducing the possibility of the enemy striking at a time or in a place for which the platoon is unprepared.

TANK FIGHTING POSITIONS

4-69. The defensive plan normally requires building tank fighting positions. The primary concern in selecting fighting positions is the platoon's ability to concentrate and mass lethal fires into its sectors of fire. Whenever possible, primary and alternate fighting positions should allow engagement of the enemy in the flank and from two directions. Supplementary fighting positions are planned to allow the platoon to defend against enemy forces that penetrate adjacent platoon positions or that move along additional avenues of approach for which the commander has assumed risk (see figure 4-13). Dispersion among fighting positions reduces vulnerability of platoon vehicles to enemy fires, however, dispersion increases the demands for local security in the area between vehicles.

4-70. Ideally, the platoon will occupy hull-down fighting positions as the enemy crosses the direct-fire trigger line. The trigger line should optimize weapon standoff, while the firing positions and the designated firing pattern should be selected to create the opportunity for flank engagements.

4-71. Each tank commander is responsible for the improvement of the fighting position. The tank commander must make sure that the location, orientation, and depth of the hole are correct before the engineer assets depart for the next fighting position. The tank commander should also know the importance of selecting a site with a background that will break up the silhouette of the vehicle; this helps to prevent sky-lining. Initially, vehicles use natural cover and concealment in hide positions to increase survivability. As time, assets, and situations permit, positions are prepared using organic excavation equipment or engineer support.

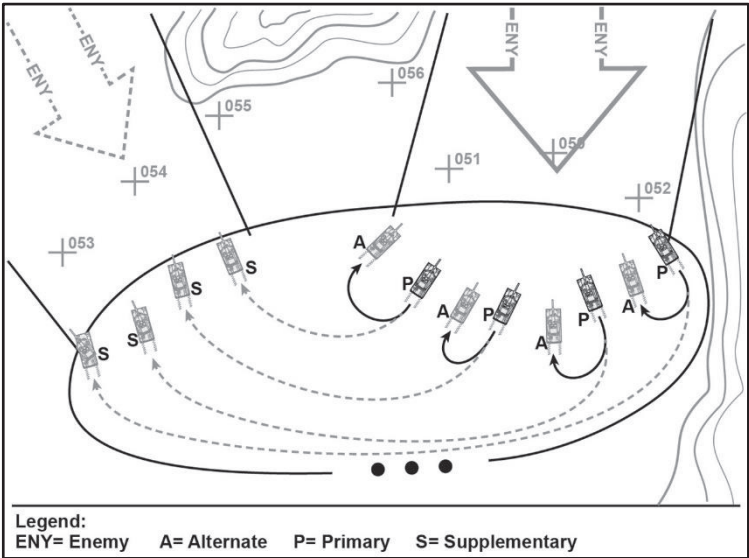


Figure 4-13. Fighting position

OCCUPATION PROCEDURES

4-72. After completing the reconnaissance and coordination, the platoon leader/*platoon commander* and tank commanders move back to their vehicles. The tank commanders remount, start vehicles simultaneously (“short count” procedure), and move to hide positions behind their primary fighting positions. On order, the platoon moves simultaneously into turret-down firing positions. These positions allow the tanks to fire only their .50 caliber or loader’s M240 machine gun. These positions also allow for scanning and observation using the gunner’s primary sight, CITV, or binoculars.

HASTY FIGHTING POSITIONS

4-73. Hasty fighting positions for combat vehicles, including armored personnel carriers and mortar carriers, take advantage of natural terrain features. These positions are initially prepared with minimal to no construction effort. As the tactical situation permits, hasty positions are improved into deliberate fighting positions.

4-74. Tank platoons conduct a hasty occupation under a variety of circumstances. During a movement to contact, the platoon may prepare to destroy a moving enemy force by conducting a hasty occupation of BPs or attack-by-fire positions in defensible terrain. During defensive operations, hasty occupation may occur during counterattack missions, after disengagement and movement to subsequent or supplementary BPs, or in response to FRAGORDs reflecting a change of mission.

4-75. A hasty occupation usually occurs in response to a prearranged signal or a FRAGORD. Often, only a minimum of planning time and information is available before execution, although in some situations, such as after disengagement, the platoon may occupy prepared positions it has previously reconnoitered.

HIDE POSITIONS

4-76. The platoon’s hide positions are located behind its primary BPs. The platoon occupies hide positions in one of two ways: either as a unit, or with individual vehicles occupying hide positions behind their primary fighting positions. The platoon leader/*platoon commander* should rehearse occupation of the BP from the hide position and record the travel time.

4-77. While in the hide position, the platoon employs all applicable OPSEC measures to limit aerial, thermal, electronic, and visual detection. It deploys OPs to provide surveillance of its sectors of fire and early warning for vehicles in the hide position. It also maintains the REDCON status prescribed in the OPORD. The hide position should not be located on or near obvious artillery targets.

4-78. The platoon leader/*platoon commander* checks with the OPs to ensure that the enemy situation has not changed, then orders platoon vehicles to occupy their primary hull-down fighting positions. Tank crews orient on the EA and complete their range cards. Each crew sends its completed range card to the platoon leader/*platoon commander*, either by messenger or by digital transmission. The crew also retains a copy of the range card for its own reference.

DELIBERATE FIGHTING POSITIONS

4-79. Deliberate fighting positions must protect a vehicle from direct fire weapon systems. The position is constructed in three parts: hide location, turret defilade, and hull defilade (see figure 4-14 and figure 4-15 on page 4-34).

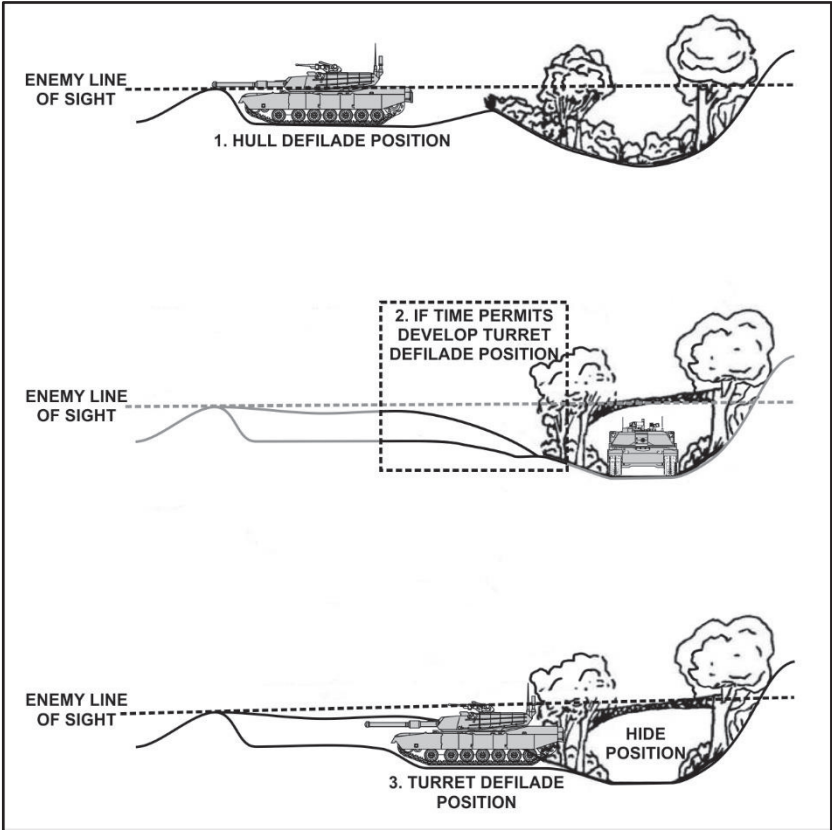


Figure 4-14. Developing deliberate fighting positions

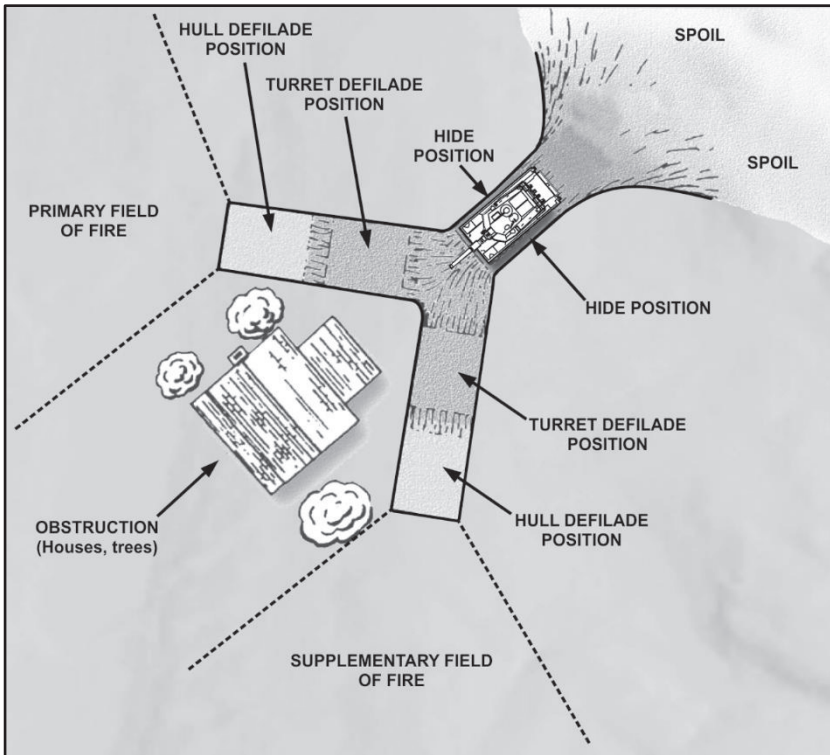


Figure 4-15. Top view of Y-shaped fighting position

4-80. The deliberate occupation of a fighting position includes the use of engineer assets to dig tank fighting positions. Tank crews must be experts at the construction of their fighting position. Engineers are the tools by which tanks can facilitate defilade positions. The tank crew must supervise the construction of the tank defilade. The tank crew and tank must be present during the construction to proof the work, ensure the fighting position is oriented in the proper direction towards the enemy, and has adequate flank protection. Handoff of the engineer effort between BPs and platoons is important for maximizing the effort of the engineers during the critical allotted timeline for dig assets.

4-81. Positions formed by natural terrain are usually best because they are easy to modify. If preparation is necessary, extensive engineer support is required. Each position is camouflaged with either natural vegetation or a camouflage net, and the spoil is flattened out or hauled away.

4-82. All fighting positions for tanks are planned as deliberate positions. Since the lack of time usually does not allow full construction of a deliberate position, only some parts of the position are prepared. For example, the complete fighting position for a tank requires the construction of a hull defilade, turret defilade, and hide location all within the same position. The maneuver team commander uses organic and engineer

earthmoving assets and usually constructs part of the fighting position. If time permits, the commander expands the fighting position to all three parts. This location can be marked with engineer tape and a chemical light so the driver knows when to stop.

STAKE THE POSITION

4-83. Once the fighting position is verified, it should be staked for marking as shown in figure 4-16. One stake is placed in front of the vehicle and driven firmly into the ground, centered on the driver’s station and just touching the hull. It should be long enough for the driver to see when in position, and can be marked with engineer tape or luminous tape for better visibility. The other stake is placed parallel to the left or right side of the tank and lined up with the hub on the front road wheels. The stakes should be placed close to the vehicle with only enough clearance to move the tank into position. Stakes must be marked so that they are visible in day/night/under conditions of limited visibility. A rock is placed at each of the front two corners of the vehicle to help in reoccupation if the stakes are lost. If the stakes are lost and the position is not otherwise marked, the vehicle is moved to the approximate location.

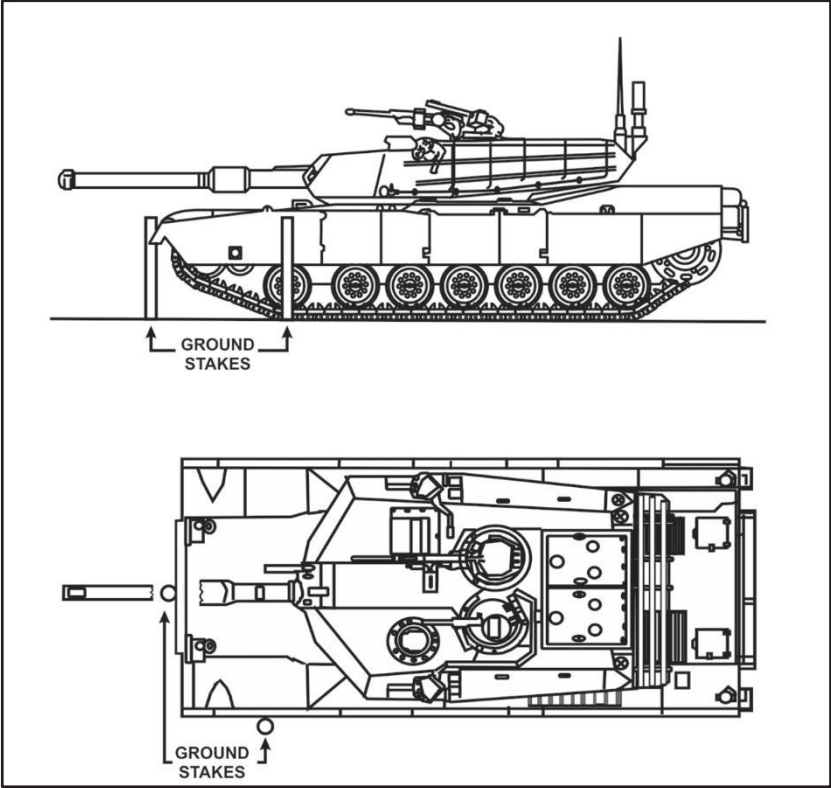


Figure 4-16. Stake the position

4-84. Staking the position allows the vehicle to quickly assume the fighting position as the driver aligns the tank to the two stakes. This should be rehearsed by tank commanders with their crews. Once in position, the gunner should index the range and azimuth for one of the TRPs on the range card. If the sight is aligned on the TRP, the vehicle is correctly positioned. If the sight is not aligned on the TRP, the gunner should tell the driver which way to move the vehicle to align the sight on the target. Only minor adjustments should be necessary. The tank commander or gunner can use a compass while dismounted to find the left and right limits.

SECTION IV – COMMON DEFENSIVE PLANNING CONSIDERATIONS

4-85. Planning a defensive task is a complex effort requiring detailed analysis and extensive coordination. In the defense, synchronizing the effects of the tank platoons and supporting systems enables the platoon leader/*platoon commander* to apply overwhelming combat power against selected advancing enemy forces. As an operation evolves, the platoon leader/*platoon commander* knows a shift to decisive and shaping operations is a probability to press the fight and keep the enemy off balance. Warfighting functions provide leaders with a means and structure for planning, preparing, and executing the defense. This section discusses the synchronization and coordination of activities within each warfighting function critical to the success of the tank platoon.

MISSION COMMAND/COMMAND AND CONTROL

4-86. The first step is the expression of the leader's vision of anticipated enemy actions. The platoon leader/*platoon commander* must understand the company or troop plan and triggers; the platoon leader/*platoon commander* develops the plan based on these factors as well as the commander's intent. The commander normally determines operational considerations such as OPSEC, occupation of fighting positions, initiation of direct fires, primary and supplementary platoon sectors of fire, and disengagement criteria; however, the commander may allow the platoon leader/*platoon commander* to make decisions covering some or all of these areas.

MOVEMENT AND MANEUVER/MANEUVER

4-87. The platoon leader/*platoon commander* completes the reconnaissance, and the platoon occupies its positions. Occupation usually includes the platoon moving from tactical AAs to the defensive positions identified during the reconnaissance. The platoon leader/*platoon commander* initiates priorities of work that include EA development and BP preparation.

4-88. Maneuver considerations employ direct fire weapons on the battlefield. In the defense, vehicle positioning is critical to the platoon's success. Vehicle positioning enables the platoon to mass fires at critical points on the battlefield and shift fires as necessary. The platoon leader/*platoon commander* exploits the strengths of the weapons systems while minimizing the platoon's exposure to enemy observation and fires.

4-89. If the platoon is designated in a reserve role, positioning the reserve in a location where it can react to several contingency plans is vital to success. The platoon leader/*platoon commander* considers terrain, trafficability of roads, potential EA, probable points of enemy penetrations, and commitment time. The reserve should be positioned in a covered and concealed position. Information concerning the reserve may be considered an essential element of friendly information and protected from enemy reconnaissance. The commander might choose to position the reserve forward initially to deceive the enemy, or to move the reserve occasionally to prevent it from being targeted by enemy indirect fires.

DEPTH AND DISPERSION

4-90. The platoon leader/*platoon commander* should disperse defensive positions laterally and in-depth. This protects the platoon from enemy observation and fires. The platoon BPs must allow sufficient maneuver space between each firing position for placement of crew-served weapons systems and Infantry squads, when attached.

4-91. Dispersing positions laterally and in-depth helps to protect the force from enemy observation and fires. EAs are established to provide for the massing of fires at critical points on the battlefield. Sectors of fire are established to distribute and shift fires throughout the extent of the EA. Once the direct fire plan is determined, fighting positions are constructed in a manner to support the fire plan.

DISENGAGEMENT CRITERIA

4-92. Disengagement criteria dictate to subordinate elements the circumstances in which they will displace to alternate, supplementary, or subsequent positions. The criteria are tied to an enemy action, such as an enemy unit advancing past a certain PL located on identifiable terrain that, when crossed, signals to defending elements that it is time to displace to their next position. They also are linked to the friendly situation. For example, the criteria might depend on whether artillery or an overwatch element can engage the enemy. Unique disengagement criteria are developed during the planning process for each specific situation.

DISPLACEMENT PLANNING

4-93. Displacement allows the platoon to retain flexibility and tactical agility in the defense. The ultimate goal of disengagement and displacement are to enable the platoon to avoid being fixed or decisively engaged by the enemy. The overarching factor in a displacement is to maintain a mobility advantage over the enemy. The platoon leader/*platoon commander* must consider several important factors in displacement planning. These factors include, among others:

- The enemy situation, for example, an attack with one company-sized enemy unit might prevent the platoon from disengaging.
- Disengagement criteria.
- Availability of direct fire suppression that can support disengagement by suppressing or disrupting the enemy.

- Availability of cover and concealment, indirect fires, and obscurants to help disengagement.
- Obstacle integration, including situational obstacles.
- Positioning of forces on terrain that provides an advantage to the disengaging elements such as linear obstacles.
- Identification of displacement routes and times when disengagement or displacement will occur. Routes and times are rehearsed.
- The size of the friendly force that must be available to engage the enemy to support the displacing unit.

4-94. While disengagement and displacement are valuable tactical tools, they can be extremely difficult to execute in the face of a rapidly moving enemy force. In fact, displacement in contact poses such great problems that the platoon leader/*platoon commander* thoroughly plans for it and rehearses displacement before conducting the defense. The platoon leader/*platoon commander* then carefully evaluates the situation when displacement in contact becomes necessary to ensure it is feasible and does not result in unacceptable personnel or equipment losses.

DIRECT FIRE SUPPRESSION

4-95. The attacking enemy force must not be allowed to bring direct and indirect fires to bear on a disengaging friendly force. Direct fires from the base-of-fire element, employed to suppress or disrupt the enemy, are the most effective method to facilitate disengagement. The platoon may receive base of direct fire support from another element in the company, but in most cases, the platoon establishes its own base-of-fire element. Having an internal base of fire requires the platoon leader/*platoon commander* to sequence the displacement of the sections.

COVER AND CONCEALMENT

4-96. The platoon uses covered and concealed routes when moving to alternate, supplementary, or subsequent positions. Regardless of the degree of protection the route itself affords, the platoon should attempt to rehearse the movement before contact. Rehearsals increase the speed at which they can conduct the movement and provide an added measure of security. The platoon leader/*platoon commander* makes a concerted effort to allocate available time to rehearse movement in limited visibility and degraded conditions.

INDIRECT FIRES AND OBSCURANTS

4-97. Artillery or mortar fires help the platoon during disengagement. Suppressive fires slow the enemy and cause them to seek cover. Smoke obscures the enemy's vision, slows their progress, or screens the defender's movement out of the BP or along their displacement route.

OBSTACLE INTEGRATION

4-98. Obstacles are integrated with direct and indirect fires. By slowing and disrupting enemy movement, obstacles provide the defender with the time necessary for displacement and allow friendly forces to employ direct and indirect fires against the enemy. The location of obstacles in support of disengagement depends on METT-TC. Ideally, an obstacle should be positioned far enough away from the defender that enemy elements could be engaged on the far side of the obstacle while keeping the defender out of range of the enemy's massed direct fires.

MOBILITY

4-99. Mobility tasks in the defense assure the ability to reposition forces, delay, and counterattack. Initially during defensive preparations, mobility tasks focus on the ability to resupply, reposition, and conduct rearward and forward passage of forces, materiel, and equipment. Once defensive preparations are complete, the focus normally shifts to supporting local counterattacks, and the higher HQ counterattack or reserve. Priorities set by the company may specify routes for improvement to support such missions. Normally, most engineer assets go to survivability and countermobility. At a set time or trigger, engineers disengage from obstacle and survivability position construction and start preparing for focused mobility missions. The platoon leader/*platoon commander* analyzes the scheme of maneuver, obstacle plan, and terrain to determine mobility requirements. Critical considerations may include:

- Lanes and gaps in the obstacle plan.
- Lane closure plan and subunit responsibility.
- Route reconnaissance, improvement, and maintenance.

COUNTERMOBILITY

4-100. To succeed in the defense, the platoon leader/*platoon commander* integrates platoon obstacles into direct and indirect fire plans, considering the intent for each obstacle group. (Refer to ATP 3-90.8/MCWP 3-17.5 for more information on countermobility in the defense.) Obstacles are normally constructed by engineers with help from the platoon. In the defense, the platoon uses obstacles to:

- Disrupt the enemy's advance to give the platoon more time to mass fires on the enemy.
- Protect defending units.
- Canalize the enemy into places where they can easily be engaged.
- Separate the enemy's tanks from their infantry.
- Strengthen areas that are lightly defended.

4-101. Obstacle intent includes the target and desired effect (clear task and purpose) and the relative location of the obstacle group. The purpose influences many aspects of the operation, from selecting and designing obstacle sites to conducting the defense. Normally, the company commander designates the purpose of an obstacle group. When

employing obstacles, the leader considers the following principles:

- Support the tactical plan. Obstacles supplement combat power, decrease the mobility of the enemy, and provide security for the platoon. While considering enemy avenues of approach, the leader also considers their own movement requirements, such as routes for resupply, withdrawal, counterattacks, patrols, and OPs.
- Tie in. The leader ties in the reinforcing obstacles with existing obstacles. The leader must also tie in the obstacle plan with the fires plan.
- Covered by observation and fire. The leader ensures that all obstacles are covered by observation and fire. This reduces the enemy's ability to breach the obstacles and increases the possibilities of placing fire on the enemy when they encounter the obstacle.
- Constructed in-depth. The leader emplaces obstacles so that each new obstacle encountered by the enemy attrits the enemy force and causes a desired and controlled reaction. Proper use of obstacles in-depth wear the enemy down and significantly increases the overall effect.
- Employed for surprise. An obvious pattern of obstacles would divulge locations of units and weapons. Friendly forces must avoid readily discernable, repetitive patterns.

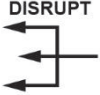



TACTICAL OBSTACLES

4-102. The company commander assigns obstacle groups, and tells the platoon leaders/*platoon commanders* and engineers what the task and purpose of each obstacle group is, and then the company commander resources the groups accordingly. Obstacle intent includes these elements:

- The target, which is the enemy force that the commander wants to affect with fires and tactical obstacles. The commander identifies the target's size, type, echelon, avenues of approach, or any combination of these.
- The obstacle effect describes how the commander wants to attack enemy maneuver with obstacles and fires. Tactical obstacles block, turn, fix, or disrupt. Obstacle effect integrates the obstacles with direct and indirect fires.
- The relative location is where the commander wants the obstacle effect to occur against the targeted enemy force. The commander initiates the obstacle integration process after identifying where on the terrain the obstacle will most decisively affect the enemy.

4-103. For example, the company commander might say, “Deny the enemy access to our flank by turning the northern company into our EA. Allow companies B and C to mass their fires to destroy the enemy.” Scatterable minefield systems and submunitions are the main means of constructing tactical obstacles. These systems, with their self- and command-destruct capabilities, are flexible, and they aid in rapid transitions between offensive and defensive tasks. They do this better than other constructed obstacles. The force constructs conventional minefields and obstacles only for a deliberate, long-term defense. In those cases, the company and platoons are usually augmented with assets from an engineer unit. Table 4-2 on page 4-42 shows the symbols for each obstacle effect, and it describes the purpose and characteristics of each.

Table 4-2. Obstacle effects

<i>OBSTACLE EFFECT</i>	<i>PURPOSE</i>	<i>FIRES AND OBSTACLES MUST:</i>	<i>OBSTACLE CHARACTERISTICS</i>
 <p>DISRUPT</p>	<ul style="list-style-type: none"> - Break up enemy formations. -Interrupt enemy's timetable and C2. -Cause premature commitment of breach assets. -Cause the enemy to piecemeal their attack. 	<ul style="list-style-type: none"> -Cause the enemy to deploy early. -Slow part of their formation while allowing part to advance unimpeded. 	<ul style="list-style-type: none"> -Do not require extensive resources. -Ensure obstacles are difficult to detect at long range.
 <p>FIX</p>	<ul style="list-style-type: none"> -Slow an attacker within and area so they can be destroyed. -Generate the time necessary for the friendly force to disengage. 	<ul style="list-style-type: none"> -Cause the enemy to deploy into attack formation before encountering the obstacles. -Allow the enemy to advance slowly in an EA or AO. -Make the enemy fight in multiple directions once they are in the EA or AO. 	<ul style="list-style-type: none"> -Array obstacles in depth. -Span the entire width of the avenues of approach. -Avoid making the terrain appear impenetrable.
 <p>TURN</p>	<ul style="list-style-type: none"> -Force the enemy to move in the direction desired by the friendly commander. 	<ul style="list-style-type: none"> -Prevent the enemy from bypassing or breaching the obstacle belt. -Maintain pressure on the enemy force throughout the turn. -Mass direct and indirect fires at the anchor point of the turn. 	<ul style="list-style-type: none"> -Tie into impassable terrain at the anchor point. -Use obstacles in depth. -Provide a subtle orientation relative to the enemy's approach.
 <p>BLOCK</p>	<ul style="list-style-type: none"> -Stope an attacker along a specific avenue of approach. -Prevent an attacker from passing through an AO or EA. -Stop the enemy from using an avenue of approach and force them to use another avenue of approach. 	<ul style="list-style-type: none"> -Prevent the enemy from bypassing or penetrating through the belt. -Stop the enemy's advance. -Destroy all enemy breach efforts. 	<ul style="list-style-type: none"> -Tie into impassable terrain. -Use complex obstacles. -Defeat the enemy's mounted and dismounted breaching effort.

Legend: AO – area of operations, EA – engagement area, C2 – command and control

PROTECTIVE OBSTACLES

4-104. In planning protective obstacles, the platoon leader/*platoon commander* evaluates the potential threat to the platoon's position and then employs the best system for that threat. Protective obstacles are usually located beyond hand grenade distance (40 to 100 meters) from the fighting position, and may extend out 300 to 500 meters to tie into tactical obstacles and existing restricted terrain. Protective obstacles are a key component of survivability operations. As with tactical obstacles, the platoon leader/*platoon commander* should plan protective obstacles in-depth and try to maximize the range of the weapons.

INTELLIGENCE

4-105. The platoon leader/*platoon commander* never has all the information needed about the enemy. Therefore, the platoon leader/*platoon commander* obtains the best possible intelligence preparation of the battlefield/*battlespace* products, conducts continuous reconnaissance, and integrates new and updated intelligence throughout the operation. The platoon leader/*platoon commander* may need to request information through the company intelligence support team/*company level intelligence cell* (if attached) from the battalion staff to answer platoon information requirements.

FIRES

4-106. The platoon leader/*platoon commander* posts targets on the overlays (in hand written and digital format). The fires planning is done by the company fire support officer and fire support sergeant. The platoon leader/*platoon commander* can provide the FIST with adjustments to these preplanned targets or with nominations for additional targets for inclusion in the company fires plan. As these targets are approved, the platoon leader/*platoon commander* plots them on the overlays. If a target is disapproved, the platoon leader/*platoon commander* notes its grid coordinates so, if needed, a speedy call for fire using the grid method can be submitted. (Refer to chapter 8 for more information.)

4-107. The platoon leader/*platoon commander* primarily integrates into the fire support plan as an observer. They must know planned targets in their area and be prepared to observe and execute those targets. The fire support officer plans and executes fires in a manner which achieves the intended task and purpose of each target to support the company commander's intent. Indirect fire serves a variety of purposes in the defense, including the following:

- Slow and disrupt enemy movement.
- Prevent the enemy from executing breaching operations.
- Destroy or delay enemy forces at obstacles using massed fires or precision munitions.
- Disrupt enemy support-by-fire elements.
- Defeat attacks along avenues of approach with the use of final protective fires.

- Disrupt the enemy to enable friendly elements to disengage or conduct counterattacks.
- Obscure enemy observation or screen friendly movement during disengagement and counterattacks.
- Provide obscurants screens to separate enemy echelons or to silhouette enemy formations to facilitate direct fire engagement.
- Provide illumination as necessary.
- Execute suppression of enemy air defense missions to support aviation operations.

4-108. Each artillery target should have a trigger line overwatched by at least a crew or section. The trigger line initiates the call for fire on a target to ensure that the impact of the rounds coincides with the enemy's arrival. The platoon's laser range finders or target designation capabilities (on digitally equipped tanks) enhance its effectiveness in requesting artillery fires using trigger lines. The location of the trigger line is based on the enemy's expected rate of advance over the terrain, the time of flight of the rounds, and the priority of fires. The company FIST should help in determining all trigger points.

4-109. The platoon leader/*platoon commander* should plan and coordinate mortar targets on dismounted avenues of approach. In addition, because mortar smoke is generally more responsive than smoke delivered by FA, the platoon leader/*platoon commander* may be able to gain a tactical advantage by employing mortar support in certain situations.

SUSTAINMENT/LOGISTICS

4-110. Resupply methods and procedures are discussed in detail in chapter 6 of this publication. If the commander authorizes pre-positioning, the platoon leader/*platoon commander* determines the amount and type of prestock (normally ammunition) that is required for the operation. For example, to calculate ammunition requirements, the platoon leader/*platoon commander* evaluates the number and type of enemy vehicles the platoon expects to engage and how much time available to conduct resupply between engagements. The platoon leader/*platoon commander* then directs the platoon sergeant to select and prepare the prestock location and coordinate the delivery of the prestock supplies.

4-111. Prestock resupply can be accomplished in virtually any location where supplies can be hidden and protected, such as in or behind the primary fighting position, along the displacement route, or in the firing positions of a subsequent BP. Preparation of the site includes providing cover, concealment, and protection for platoon and delivery personnel and vehicles during the transfer process. The site must also protect the supply materials from enemy observation and the effects of artillery and weather.

4-112. Once the supplies are delivered, the prestock site should be concealed. The platoon should conduct periodic security checks or keep the site under constant surveillance to ensure safekeeping of the prestock.

PROTECTION/*FORCE PROTECTION*

4-113. The platoon leader/*platoon commander* must consider protection during the planning phase of the defense. Survivability construction includes fighting positions, protective positions, and hardening. These are prepared to protect vehicles, personnel, and weapons systems. Vehicle fighting positions can be constructed with hull and turret-defilade observation positions.

4-114. The platoon must maximize the use of camouflage, concealment, and cover for primary, alternate, and subsequent fighting positions. This is protection from enemy observation. The shape of the tank can be disguised by using a camouflage net, brush, or tree branches. Camouflage must appear natural and may require regular replacement. Reflecting surfaces and colors can be camouflaged in several ways. Paint can be dulled with mud. Window glass, plastic map covers, optical instruments, and food boxes must be concealed. Faces and hands may give away a well-hidden position and should be dulled or shaded whenever possible.

4-115. Because engineer assets are at a premium during defensive preparations, they should never be allowed to remain idle for any reason other than maintenance checks and services. Either the platoon leader/*platoon commander* or a designated tank commander must physically link up with the engineers as directed in the platoon OPOD and escort them to each fighting position. The escort provides local security and instructions to the engineers.

4-116. To reduce the electronic signature, the platoon can consider using low power on all radios and restrict the use of digital systems. When facing a space based or cyber-electromagnetic threat, the platoon can employ the use of runners, wire communications, or hand and arm signals between tanks.

4-117. The platoon hot loop allows each tank to communicate with the platoon leader/*platoon commander* by wire. This method of communications is especially effective in static positions such as defensive positions, OPs, and AAs. Unit SOPs, tailored to counter the enemy's electronic warfare capability, will dictate the use of wire.

4-118. Air and missile defense support to the platoon may be limited. Units should expect to use their organic weapons systems for self-defense against enemy air threats (see chapter 8). Plan for CBRN reconnaissance at likely locations for enemy employment of CBRN agents and hazards (See appendix B). Use obscurants to support disengagement or movement of forces. Assign sectors of fire to prevent fratricide and friendly fire.

SECTION V – FORMS OF THE DEFENSE

4-119. The tank platoon usually defends using or participating in one of three forms of defense: defense of a linear obstacle, perimeter defense, and reverse slope. The platoon also can defend using a combination of these forms (refer to FM 3-90-1 for more information).

DEFENSE OF A LINEAR OBSTACLE

4-120. A platoon leader/*platoon commander* may conduct either a mobile or area defense along or behind a linear obstacle (FM 3-90-1). This form of defense may be used when defensible terrain is available in the forward portion of the platoon's AO, or to take advantage of a major linear natural obstacle. Linear obstacles such as mountain ranges or river lines generally favor a forward defense. It is extremely difficult to deploy in strength along the entire length of a linear obstacle, so the defending leader must conduct economy of force measures in some areas.

4-121. The mobile defense allows the enemy an opportunity to cross the obstacle with a portion of their force. In this case, the tank platoon may participate as part of the fixing force or the striking force. However, the tank platoon normally prefers an area defense because it accepts less risk by not allowing the enemy to cross the linear obstacle. If the enemy does penetrate the linear obstacle at a given point, the leader's use of a defense in-depth prevents them from rapidly exploiting their success. It also defuses the enemy's combat power by forcing them to contain bypassed friendly defensive positions in addition to continuing to attack positions in greater depth

4-122. Defense of a linear obstacle allows interlocking and overlapping observation and fields of fire across the tank platoon's front (see figure 4-17). Sufficient resources must be available to provide adequate combat power to detect and stop an attack. The platoon relies on fighting from well-prepared positions. It uses a high volume of direct and indirect fires to stop the attacks. The main concern when fighting this form of defense is the lack of flexibility and the difficulty of seizing the initiative and seeking out enemy weaknesses. Obstacles, indirect fires, and contingency plans are vital to this maneuver. The platoon depends upon surprise, well-prepared positions, and deadly accurate fires to defeat the enemy.

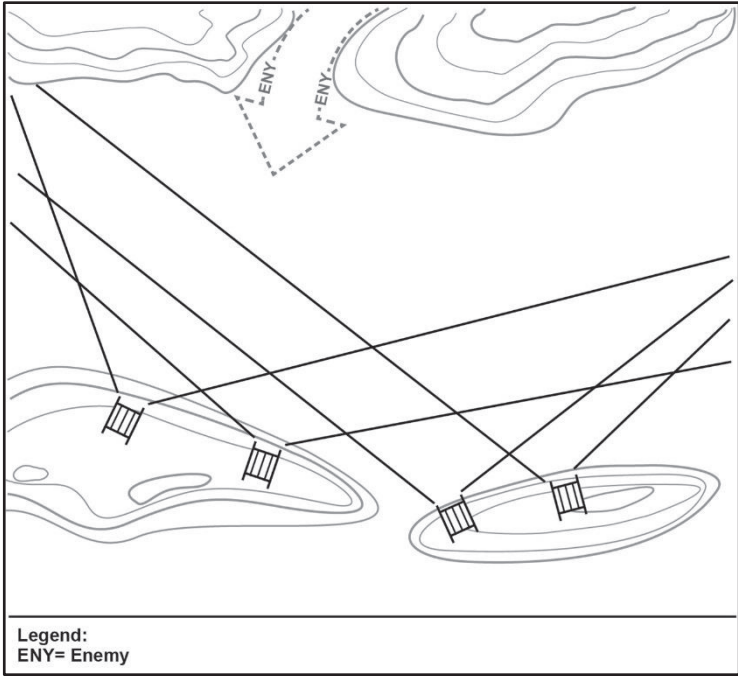


Figure 4-17. Platoon defense of a linear obstacle

PERIMETER DEFENSE

4-123. The platoon leader/*platoon commander* can employ the perimeter defense as an option when conducting an area defense. A perimeter defense is oriented in all directions (FM 3-90-1; see figure 4-18). The platoon uses it for self-security and to protect other units located within the perimeter. The platoon can employ a perimeter defense in all types of terrain. The platoon might be called upon to execute the perimeter defense under a variety of conditions, including:

- When it must secure itself against terrorist or insurgent attacks in an urban area.
- When the platoon must conserve or build combat power to execute offensive tasks.
- When it must hold critical terrain in areas where the defense is not tied in with adjacent units.
- When it has been bypassed and isolated by the enemy and must defend in place.
- When it conducts occupation of an independent AA or reserve position.
- When it begins preparation of a strong point.
- When it is directed to concentrate fires into two or more adjacent avenues of approach.

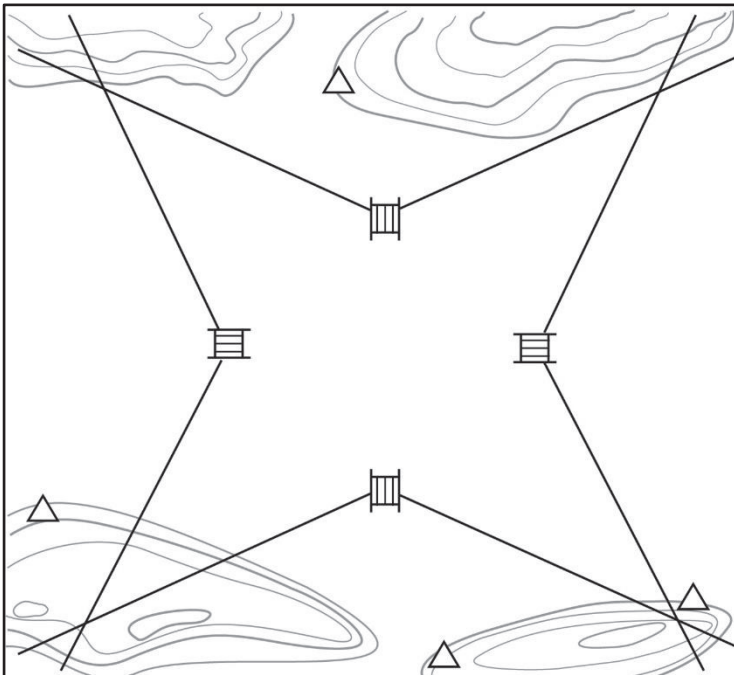


Figure 4-18. Platoon perimeter defense

REVERSE-SLOPE DEFENSE

4-124. An alternative to defending on the forward slope of a hill or a ridge is to defend on a reverse slope (see figure 4-19). In such a defense, the tank platoon is deployed on terrain that is masked from enemy direct fire and ground observation by the crest of a hill. Although some units and weapons might be positioned on the forward slope, the crest, or the counter-slope (a forward slope of a hill to the rear of a reverse slope), most forces are on the reverse slope. The key to this defense is control the crest by direct fire.

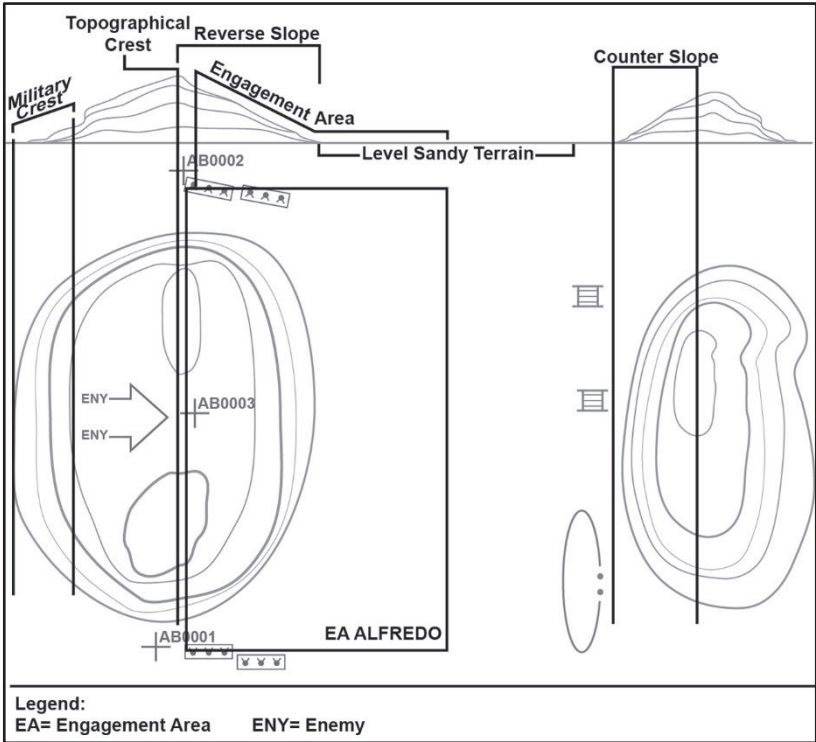


Figure 4-19. Platoon defense on a reverse slope

4-125. The tank platoon leader/*platoon commander* can adopt a reverse slope position when—

- Enemy fire makes the counter slope untenable.
- Lack of cover and concealment on the counter slope makes it untenable.
- The counter slope has been lost or not yet been gained.
- The counter slope is exposed to enemy direct fire weapons fired from beyond the effective range of the defender’s weapons. Moving to the reverse slope removes the attacker’s standoff advantage.
- The terrain on the reverse slope provides better fields of fire than the forward slope.

- Surprising and deceiving the enemy as to the true location of the platoon's defensive positions is essential.
- Enemy weapons systems have overmatch in range and lethality.

4-126. When executing a reverse slope defense, the leader places special emphasis on a direct and indirect fire support plan to prevent the enemy's occupation and using crest of the hill, and OPs or reconnaissance elements on the forward slope to provide observation across the entire front and security to the main BPs.

4-127. These are some special considerations when defending on a reverse slope:

- Observation of the enemy is more difficult.
- Units in this position see forward no farther than the crest. This makes it hard to determine exactly where the enemy is as they advance, especially when visibility is poor.
- OPs must be placed forward of the topographic crest for early warning and long-range observation.
- OPs may not have the capability to push much further than the topographical crest if their communication equipment cannot reach the force on the reverse slope.
- More difficult to move from primary position to alternate, supplementary, or subsequent position.
- Egress from the position might be more difficult.
- Fields of fire are usually short.
- If the enemy gains the crest, they can assault downhill. This may give the enemy a psychological advantage.
- If OPs are insufficient or improperly placed, the defenders might have to fight an enemy who suddenly appears in strength at close range.
- If one or both forces is severely attrited, it may be very difficult to break contact.
- The defender often has the opportunity to engage first.

SECTION VI – RANGE CARDS AND SECTOR SKETCHES

4-128. A range card (DA Form 5517, *Standard Range Card*) is a sketch of the assigned area for a direct fire weapon system on a given sector of fire (refer to ATP 3-21.8 for more information). A range card aids the platoon leader/*platoon commander* in planning and controlling fires and aids the crews and gunners in acquiring targets during limited visibility. Range cards show possible target areas and terrain features plotted with a firing position. The process of walking and sketching the terrain to create a range card allows the crew or gunner to become more familiar with their AO. They should continually assess the area and, if necessary, update the range card.

RANGE CARD

4-129. The range card is an aid for replacement personnel or tanks to move into the position and orient on their AO. The gunner and crew should create the range card so that they become more familiar with the terrain in their AO. To prepare a range card, the gunner and crew must know the following information:

- Sectors of fire. A sector of fire is a piece of the battlefield for which the gunner is responsible.
- TRP. Leaders designate natural or manmade features as reference points. The gunner uses these reference points for target acquisition and range determination.
- Dead space. Dead space is an area that cannot be observed or covered by direct fire systems within the sector of fire.
- Maximum engagement line. The maximum engagement line is the depth of the area and is normally limited to the maximum effective engagement range of the weapons systems.
- Weapons reference point. The weapons reference point is an easily recognizable terrain feature on the map used to help leaders in plotting the vehicle.

4-130. The gunner or crew prepares two copies of the range card. If alternate and supplementary firing positions are assigned, two copies are required for these as well. A copy is kept with the vehicle position, and the other given to the platoon leader/*platoon commander* for the sketch. The gunner and crew prepare the range card according to ATP 3-21.8. Figure 4-20 on page 4-52 shows an example range card for a tank.

4-131. When the tank is moved into position, but before engineer assets are released from the position, the crew will ensure the target areas and obstacles within their assigned sector of fire can be fired on. They will also confirm TRPs, as a TRP that could be engaged before the fighting position was prepared may be masked when the tank is dug in.

4-132. Time permitting, the platoon leader/*platoon commander* or the platoon sergeant verifies the range cards by mounting each tank to view its respective sector through the gunner's primary sight extension or CITV.

STANDARD RANGE CARD					
For use of this form see ATP 3-21.8; the proponent agency is TRADOC.					
SQUAD <u>B11</u>	May be used for all types of direct fire weapons.				↑ MAGNETIC NORTH
PLT <u>BLUE</u>					CO <u>B</u>
DATA SECTION					
POSITION IDENTIFICATION <u>MG 8265 3825</u>			DATE <u>23 APR 15</u>		
WEAPON <u>B11 - M1A2</u>			EACH CIRCLE EQUALS METERS <u>250</u>		
NO.	DIRECTION/DEFLECTION	ELEVATION	RANGE	AMMO	DESCRIPTION
1	<u>5900 Mils</u>		<u>1100m</u>	<u>Sabot</u>	<u>TRP S10</u>
2	<u>6200 Mils</u>		<u>1800m</u>	<u>Heat</u>	<u>BARN, TRP SW20</u>
3	<u>6400 Mils</u>		<u>1600m</u>	<u>Heat</u>	<u>BRIDGE, AB6900</u>
4	<u>0300 Mils</u>		<u>2100m</u>	<u>Sabot</u>	<u>TRP NE25</u>
5			<u>500m</u>	<u>COAX</u>	<u>FPL</u>
REMARKS: <u>PRIORITY OF FIRES GOES TO BLUE. FPL MACHINE GUNS ONLY. BRIDGE AT RIVER CROSSING AT CENTER OF SECTOR.</u>					
DA FORM 5517, FEB 2016			PREVIOUS EDITIONS ARE OBSOLETE.		APD LCV1.00

Figure 4-20. Example of a completed range card

PLATOON SECTOR SKETCH

4-133. Tank commanders prepare their range cards and submit them to the platoon leader/*platoon commander*. The platoon leader/*platoon commander* combines all range cards to prepare a platoon sector sketch, which is drawn as close to scale as possible and includes a target list for direct and indirect fires (see figure 4-21 on page 4-54). Once the platoon sector sketch is prepared and confirmed, the platoon leader/*platoon commander* provides it to the company commander. At a minimum, the platoon sector sketch should show—

- Primary and secondary sectors of fire or EAs.
- Primary, alternate, and supplementary positions.
- Maximum engagement lines for 120-mm, M240, and .50 caliber.
- OPs.
- TRPs.
- Mines and other obstacles.
- Indirect fire target locations and final protective fire location (if applicable).
- Position and area of flanking unit vehicles.
- Priority engagement by tank.

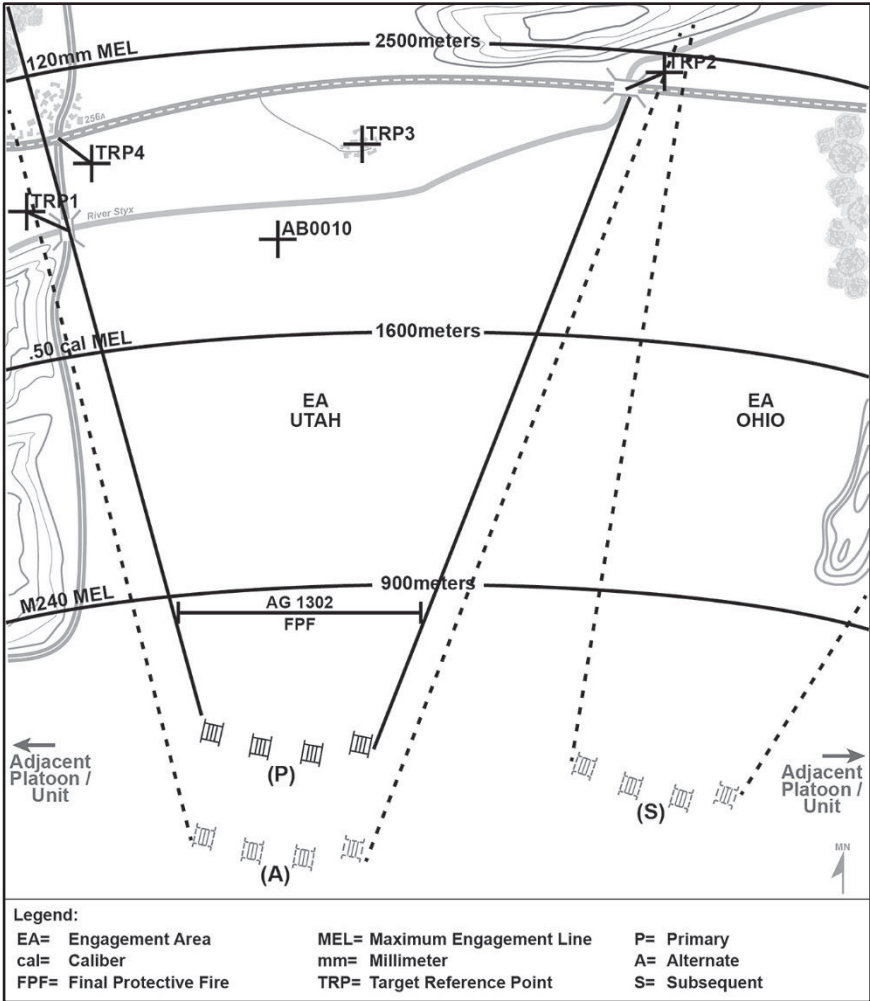


Figure 4-21. Example of a platoon sector sketch

COORDINATION WITH ADJACENT UNITS

4-134. Platoon leaders/*platoon commanders* coordinate with adjacent platoons so that all positions and all platoons are mutually supporting. The platoon leader/*platoon commander* must ensure that this coordination occurs. Coordination is usually initiated from left to right. Gaps between positions are covered by fire as a minimum. Contact points are established to ensure friendly forces meet at some specific point on the ground to tie in their flanks. In many cases, the exchange of sector sketches will accomplish most of this. Typical information that is exchanged includes—

- Locations of primary, alternate, and supplementary positions; sectors of fire.
- Location of dead space between platoons and how it is to be covered.

- Location of OPs.
- Location and types of obstacles and how to cover them.
- Infantry patrols (size, type, time of departure and return, and routes).

WEAPONS PLANNING RANGES

4-135. The weapons planning range for a tank is the distance at which the platoon leader/*platoon commander* intends to begin engaging enemy targets. In determining this range, the platoon leader/*platoon commander* must know the lethality of the kinetic energy rounds the crews will be firing versus the specific vulnerabilities of the enemy armor the platoon leader/*platoon commander* expects to face. Lethality, and as a result the weapon planning range, is based on the two factors known as probability of hit and probability of kill (PK). While actual values of probability of hit and PK are classified, it is obvious that probability of hit decreases as range increases, as does PK for kinetic energy penetrators. This is because velocity decreases with range; penetration is largely dependent on velocity.

EVALUATING AND DETERMINING THE PLANNING RANGE

4-136. With limited rounds available on board each vehicle, the platoon leader/*platoon commander* must weigh the tactical alternatives and try to make every round count. Key factors in determining the weapon planning range are mission variables. The commander must consider the capabilities and limitations of friendly forces as well as those of enemy personnel. In addition, the planning range for a tank cannot be separated from the number of rounds the platoon leader/*platoon commander* is prepared to expend. While it is possible to hit an enemy tank at 3000 meters, the probability of doing so on the first round is low. Further, even when a hit is made, PK is very low against turret frontal armor.

4-137. Taking into account these factors, the platoon leader/*platoon commander* usually directs the tank commanders to engage targets from closer ranges, especially in frontal engagements. Considering only PK, frontal tank engagements should begin at less than 2500 meters. Several factors combine to make frontal engagements of enemy tanks beyond 2500 meters only marginally effective. If the tactical situation permits, the optimum weapon planning range against tanks in the frontal 60-degree arc is 1500 meters. This can be extended with the awareness that probability of hit and PK against turret frontal armor will degrade with increased distances.

4-138. Engagement of enemy fighting vehicles with lighter armor can begin at longer ranges based on the increased PK; however, due to their smaller size, the probability of hit for these vehicles is normally lower than that for tanks. Frontal engagements of enemy fighting vehicles with lighter armor can begin at longer ranges; the PK is higher due to the difference in protection levels.

4-139. Further consideration on engagement range should be based on terrain, weather, obscuration, and enemy capabilities and type of equipment. Platoons may be faced with a wide variety of equipment, including (but not limited to) converted civilian trucks, older equipment upgraded with new sensors and capabilities, similar or peer threats, or

superior, state of the art equipment. The tank platoon leader/*platoon commander* must not only understand how far the tank platoon can observe and engage the enemy, but also how far the enemy can observe and engage the friendly tank platoon.

LONG-RANGE ENGAGEMENT CONSIDERATIONS

4-140. When the decision is made to engage the enemy at longer ranges, the platoon leader/*platoon commander* is almost certain to compromise the platoon's position and lose the element of surprise. At the same time, however, the forward placement of a platoon may deceive the enemy as to the location of the main defensive position and cause them to deploy sooner than they had anticipated.

4-141. Long-range engagements require the use of sensing tanks and observed fire techniques; as a result, the platoon leader/*platoon commander* should always attempt to conduct these engagements from an elevated firing position. The platoon leader/*platoon commander* should task only the most proficient firing crews and most accurate tanks to execute the long-range mission.

TERRAIN

4-142. The platoon leader/*platoon commander* mentally rehearses the battle as they conduct TLP. After reconnaissance of the EA or sector, the platoon leader/*platoon commander* gathers all the tank commanders (and gunners, if possible) where they can view the area. The platoon leader/*platoon commander* ensures that everyone can identify the assigned TRPs, obstacles, avenues of approach, prominent terrain features, and dead space.

4-143. Using TRPs, terrain features, or manmade obstacles, the platoon leader/*platoon commander* ensures that each tank has a well-defined and well-understood sector of fire. An individual tank sector should be wide enough to allow some overlap with adjacent vehicles, but narrow enough to prevent overkill of targets. This reduces the scanning requirements for the gunner and the potential for overkill; it also ensures that the entire EA or platoon sector is covered by main gun fire. Based on the commander's guidance, the platoon leader/*platoon commander* also establishes the trigger line for initiation of direct fires and takes other actions that are time or space dependent.

4-144. The platoon leader/*platoon commander* decides whether to have all the tanks orient on the TRPs assigned by the company team commander or to have sections or individual tanks orient in slightly different areas (platoon-level targets). For example, if the platoon leader/*platoon commander* is tasked to orient on TRP 3, the platoon leader/*platoon commander* might decide on one of the following missions for the subordinates, based on the enemy and terrain:

- All tanks orient on TRP 3.
- Alpha section orients to the left of TRP 3 while Bravo section orients to the right.

4-145. When the platoon leader/*platoon commander* decides how to use the tanks to best execute the company team commander's intent, the platoon leader/*platoon commander* checks each firing position that was selected, identifying and confirming

sectors of fire to ensure mutual support between tanks. The platoon leader/*platoon commander* must know where all friendly elements are positioned, if any. The platoon leader/*platoon commander* must then plan machine gun fires for each tank to protect itself as well as other tanks in the platoon and adjacent friendly elements. The platoon leader/*platoon commander* does this by assigning final protective fires with the platoon using its coax machine guns to fire on dismounted enemy infantry, and by planning for additional indirect fire support.

SECTION VII – TRANSITIONS

4-146. During the planning for operations, the platoon leader/*platoon commander* must discern from the higher HQ OPORD what the potential follow-on missions are and begin to plan how they intend to achieve them. During this planning, the leader determines the possible timeline and location for consolidation and reorganization best facilities future operation and provides adequate protection.

CONSOLIDATION

4-147. Unit leaders plan and prepare for consolidation during TLP. The following actions are usually a part of consolidation:

- Eliminate enemy resistance on the objective.
- Establish security beyond the objective by securing areas that may be the source of enemy direct fires or enemy artillery observation.
- Establish additional security measures such as OPs and patrols.
- Prepare for and help the passage of follow-on forces, if required.
- Continue to improve security by conducting other necessary defensive actions.
- Adjust final protective fires and register targets along likely mounted and dismounted avenues of approach.
- Protect the obstacle reduction effort.
- Secure detainees.
- Prepare for enemy counterattack.

REORGANIZATION

4-148. Reorganization usually is conducted concurrently with consolidation. It includes actions taken to prepare the unit for follow-on tasks. As with consolidation, leaders plan and prepare for reorganization during TLP. During reorganization, the platoon leader/*platoon commander* and platoon sergeant ensure the following actions are taken:

- Report unit location and status to keep higher commander informed of the situation.
- Provide essential medical treatment and evacuate casualties as necessary.

- Treat and evacuate wounded detainees and process the remainder of detainees.
- Cross-level personnel and adjust task organization as required to support the next phase or mission.
- Revise the communication plan as required.
- Conducts resupply operations, including rearming and refueling.
- Redistribute ammunition.
- Conduct required maintenance.
- Continue improving defensive positions as necessary.

CONTINUING OPERATIONS

4-149. At the conclusion of an engagement, the platoon may continue the defense, or if ordered, transition to the offense or stability. The platoon leader/*platoon commander* considers the higher commander's concept of the operation, friendly capabilities, and enemy situation when making this decision. All missions should include plans for exploiting success or assuming a defensive posture.

4-150. A defending unit may transition from defensive tasks to the retrograde as a part of continuing operations. A retrograde usually involves a combination of a delay, withdrawal, and retirement that may occur simultaneously or sequentially. As in other missions, the leader's concept of the operation and intent drive planning for the retrograde. Each form of retrograde has its distinct planning considerations, but considerations common to all retrogrades are increased risk, the need for synchronization, and security.

TRANSITION TO THE OFFENSE

4-151. A company commander may order a defending platoon to conduct an assault or participate in a movement to contact. As part of a reserve force, the platoon may execute a counterattack to destroy exposed enemy elements and free decisively engaged friendly elements. The counterattack element must maneuver rapidly to its firing position, often fighting through enemy flank security elements, to complete the counterattack before the enemy can bring follow-on forces forward to influence the fight.

4-152. Execution of the counterattack is similar to an attack by fire. Planning and preparation considerations for counterattack vary depending on the purpose and location of the operation. For example, the counterattack may be conducted forward of friendly positions, requiring the reserve force to move around friendly elements and through their protective and tactical obstacles. In other situations, the platoon leader/*platoon commander* may order the platoon to block, fix, or contain a penetration. In any case, the reserve force conducts the counterattack as an enemy-oriented task.

TRANSITION TO STABILITY

4-153. It may be tactically wise for the leader to plan a defensive contingency with on order offensive tasks for operations focused on stability tasks. Subordinate leaders must

be fully trained to recognize activities, which initiate this transition. Leaders and crewmembers must be aware that elements of the BCT/*Marine-Air Ground Task Force* could be conducting offensive, defensive, and stability missions simultaneously within a small radius of each other. Actions in one unit's AO can affect a change in whatever type task an adjacent unit is conducting. For example, an engagement with an enemy force may have caused noncombatants to be displaced to another section of the city, leaving the AO open to theft, looting, and vandalism by belligerents.

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Chapter 5

Stability

Stability components of an operation leverage the coercive and constructive capabilities of the military force to establish a safe and secure environment, facilitate reconciliation between local or regional adversaries; establish political, legal, social, and economic institutions; and facilitate the transition of responsibility to a legitimate civil authority. This chapter discusses tank platoon support to stability tasks; it addresses tactical actions and tasks to support stability, planning considerations and transitions. (Refer to ADRP 3-07 for more information.)

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SECTION I – OVERVIEW OF STABILITY

5-1. Unified land operations require continuous, simultaneous combinations of offensive, defensive, and stability tasks. Stabilization is the process by which underlying tensions that might lead to resurgence in violence and a breakdown in law and order are managed and reduced, while efforts are made to support preconditions for successful long-term development. (Refer to FM 3-07 for more information.)

5-2. As combat operations culminate, part of the force secures critical infrastructure and populated areas. Protecting and preventing further harm to the civilian population are legal obligations of military forces during operations. Leaders plan to minimize the effects of combat on the populace. Properly focused, executed stability tasks prevent population centers from degenerating into civil unrest and becoming recruiting areas for opposition movements or insurgencies.

5-3. Tank platoons are not capable of achieving the desired end state of stability tasks independently. They support stability tasks by performing platoon and section-level missions, tasks, and activities supporting the stability tasks of its higher HQ often partnered and working closely with other unified action partners.

STABILITY FRAMEWORK

5-4. A stability framework based on conditions in the AO of initial response, transformation, and fostering sustainability, helps the unit determine the required training and task organization of forces before initial deployment, and serves as a guide to actions in an operation focused on stability tasks. (Refer to ATP 3-07.5 for more information.) Stability tasks occur in three phases. These phases facilitate identifying lead responsibilities and determining priorities and describe the conditions on the operational environment:

- Initial response phase. Generally reflect activity executed to stabilize a crisis state in the AO.
- Transformation phase. Stabilization, reconstruction, and capacity-building are actions performed in a relatively secure environment.
- Fostering sustainability phase. Actions that encompass long-term efforts, which capitalize on capacity building and reconstruction activities.

STABILITY TASKS

5-5. Army forces conduct the following six primary stability tasks: establish civil security, establish civil control, restore essential services, support to governance, support to economic and infrastructure development, and conduct security cooperation. Stability tasks are executed outside the United States and include coercive and cooperative actions by the military force:

- Establish civil security. Involves providing for safety of the host nation and its population, including protection from internal and external threats; it is essential to providing a safe and secure environment. Tank platoons execute stability tasks in conjunction with the combined arms battalion.
- Establish civil control. An initial step toward instituting rule of law and stable governance.
- Restore essential services. Essential services include emergency medical care and rescue, food and water, and emergency shelter.
- Support to governance. Enables interagency and host nation actions to succeed. At the platoon level, support to governance tasks are dependent on those of the combined arms battalion.

- Support to economic and infrastructure development. Assist a host nation develop capability and capacity in these areas. At the platoon-level, support to economic and infrastructure development focuses primarily on continuing civil security and civil control operations to provide a safe and secure environment that allows external agencies to leverage their capabilities.
- Conduct security cooperation. As part of consolidation of gains, enhances military engagement and builds the security capacity of partner states.

SECTION II – UNIFIED ACTION PARTNERS

5-6. Unified action partners are military forces, governmental and nongovernmental organizations, and elements of the private sector with whom Army and Marine Corps forces plan, coordinate, synchronize, and integrate during the conduct of operations. Unified action partners can include joint forces and components, multinational forces, and U.S. government agencies and departments.

HOST NATION PARTNERS

5-7. Host nation partners may include military, police, border agents, intelligence agents, paramilitary, and other security elements such as militias or private security companies. Other potential partners may include host nation government representatives and agencies, tribal leaders, and influential private citizens.

NONGOVERNMENTAL ORGANIZATIONS

5-8. If present in the host nation, intergovernmental organizations such as the United Nations, African Union, European Union, and others can be valuable partners for stabilization and reconstruction because of their knowledge of the local situation, ties, and experience. They may have military or nonmilitary components and operate under their own mandates and direction. Their forces may be best suited for a relatively benign peacekeeping role and less militarily capable than U.S. Army and USMC units, but they are generally perceived as legitimate by a wide range of actors. By maintaining a safe and secure environment, nonmilitary organizations—such as the United Nations World Food Program and World Health Organization—often prove vital in providing humanitarian assistance and development. Enabling such organizations may be one of the most important stability objectives. Although U.S. forces often view nongovernmental organizations as partners to be integrated, most nongovernmental organizations prefer a clearly neutral posture and avoid being associated with any military force.

CIVIL AFFAIRS

5-9. Civil affairs forces support leaders by engaging civil component (interagency, indigenous population and institutions, host nation, intergovernmental organizations or private sector) of an operational environment conducting civil affairs operations and support to the commander's civil-military operations. Civil affairs forces ensure

sustained legitimacy of the mission and transparency and credibility of the military force before, during, or after other military missions. This support involves applying specialty skills (normally responsibility of a local, regional, or national government) to enhance conduct of civil-military operations. As they relate to information related capabilities civil affairs operations and civil-military operations differ in purpose, focus, and specialization. Civil-military operations are a leader's activities establishing, maintaining, influencing, or exploiting relations among military forces, governmental, nongovernmental civilian organizations, authorities, and civilians.

PUBLIC AFFAIRS

5-10. Public affairs operations fulfill the Army's obligation to keep the American people and Army informed. They help to establish conditions leading to confidence in the Army and its readiness to conduct unified land operations. Public affairs operations strive to enhance public understanding and garner American, as well as global, support for the Army by engaging with domestic and foreign media entities. (Refer to FM 3-61 or *MCTP 3-30F* for more information.)

MISSION AND OPERATIONS

5-11. Public affairs Service members accomplish their mission through public information, command information, and public engagement. Public information focuses on informing external audiences. It primarily engages media and key audiences to convey Army and command themes and messages to global and American audiences. Command information focuses on internal audiences—military, civilians, and family members—who recognize that an informed force is a more ready, reliable, and resilient force.

5-12. Integrating public affairs with other information-related capabilities helps leaders shape the information environment, provides valuable media assessment, and counters enemy propaganda and disinformation. Public affairs operations support the leader's development of themes and messages and collaborate with other information-related capabilities to protect OPSEC and avoid information fratricide.

MEDIA CONSIDERATIONS

5-13. The presence of the media is a reality that confronts every Service member involved in all operations. All leaders and Service members must know how to deal effectively with broadcast and print reporters and photographers. This should include an understanding of subjects they have authorization to discuss and subjects the public affairs officer must address.

MILITARY INFORMATION SUPPORT OPERATIONS

5-14. Military information support operations are the leader's primary capability to inform and influence foreign populations in AO. Military information support personnel conduct operations to induce or reinforce specific attitudes and behaviors favorable to U.S. military objectives. (Refer to FM 3-53 or *MCWP 3-32* for more information.)

INFORMATION OPERATIONS

5-15. Military information support personnel provide subject matter expertise in the information operations. As primary members of the information operations working group, they advise, plan, provide operations oversight, and assess messages and actions having potential or actual psychological effects. Military information support units also provide analysis, development, production, distribution, and dissemination capabilities for military information support operations and are the primary executors for purposes of informing and influencing target audiences. Military information support personnel provide dedicated intelligence support which can also provide post-delivery measures of performance and measures of effectiveness. The information operations element utilizes military information support analyses of audiences and their environments. The information operations element also assesses adversary information and capability, including information for effects, misinformation, disinformation, and propaganda.

5-16. Military information support planners and attached military information support units help leaders in executing Service member and leader engagement efforts in AO. Military information support personnel are trained, educated, equipped, and organized to plan, monitor, and assess engagement with foreign populations and select audiences. This engagement includes planning engagements with foreign populations, leaders, key communicators, and others with specific intent to influence to support leader objectives. Military information support planners plan, manage, and assess Service member and leader engagement efforts. They support the leader's larger engagement strategy.

COMBAT CAMERA

5-17. Combat camera video specialists provide leaders with still and video imagery capabilities to support operational and planning requirements. These forces use video documentation capabilities ranging from aerial to underwater photography. They access areas and events inaccessible to other personnel or media. Furthermore, combat camera teams have a technological capability to transmit real-time images and in turn serve to reinforce other information-related capability efforts. Likewise, their documentation of operations provides imagery support countering misinformation or propaganda.

SECTION III – TACTICAL ACTIONS AND TASKS IN SUPPORT OF STABILITY

5-18. The platoon may execute several tasks during stability tasks. The following information examines those tasks. The list is not all-inclusive; assessment of the mission variables and the operational considerations applicable in the AO may identify additional mission requirements.

5-19. The platoon leader/*platoon commander* must keep in mind the ever-changing, often confusing conditions of stability operations. The platoon's flexibility is a key to success under such conditions. The platoon leader/*platoon commander* should attempt to shape the role or mission to match the platoon's unique characteristics and capabilities.

ESTABLISH A CHECKPOINT

5-20. A checkpoint is a predetermined point on the ground used to control movement, tactical maneuver, and orientation. A checkpoint is the location where military police or other personnel check vehicular or pedestrian traffic to enforce circulation control measures and other laws, orders, and regulations. (Refer to TC 3-39.30 for more information.) Checkpoints can be either deliberate or hasty.

5-21. The platoon may be directed to establish a checkpoint to achieve one or more of the following purposes:

- Deter illegal movement.
- Create an instant roadblock.
- Control movement into the AO or onto a specific route.
- To protect key infrastructure.
- Demonstrate the presence of peace forces.
- Prevent smuggling of contraband.
- Enforce the terms of peace agreements.
- Serve as an OP, patrol base, or both.

5-22. The construction of checkpoints may range from a simple log across the road to heavily fortified positions reinforced with obstacles. Some have a simple gate manned by a few Service members. Others have obstacles in the roadway to prevent vehicle traffic. Obstacles, such as mines, wire, and beam obstacles, may be used to hinder or stop vehicle movement. Checkpoints are located at natural choke points such as in ravines or on tops of hills. This allows the natural terrain (winding mountain roads or rivers and streams) to canalize and limit vehicle movement. It also eliminates any bypass around the checkpoint.

CONDUCT CONVOY ESCORT

5-23. The platoon provides the convoy escort with security and close-in protection from direct fire while on the move. The tank platoon is well suited for this role because of its vehicles' mobility, firepower, and armor protection against direct and indirect fires. Depending on a variety of factors (size of the convoy, escort assets available, and mission variables), the platoon may perform convoy escort, either independently or as part of a larger unit's convoy security mission.

5-24. The relationship between the platoon and the convoy commander must provide for unity of command and effort if combat operations are required during the course of the mission. In most cases, the platoon executes the escort mission under control of the security force commander, who is usually operational control or attached to the convoy commander.

5-25. The convoy commander should issue a complete OPORD to all vehicle commanders in the convoy before execution of the mission. This is vital because the convoy may itself be task organized from a variety of units and because some vehicles

may not have tactical radios. The order should follow the standard five paragraph OPORD format, but special emphasis should be placed on the following subjects:

- Route of march (with a strip map provided for each vehicle commander).
- Order of march.
- Actions at halts.
- Actions in case of vehicle breakdown.
- Actions on contact.
- Chain of command.
- Communications and signal information.

SUPPORT CORDON AND SEARCH OPERATIONS

5-26. Cordon and search is a technique of a movement to contact which involves isolating the target area, searching the area, and capturing or destroying possible insurgents or contraband. A cordon and search may be a task during a movement to contact, raid, deliberate attack, or area reconnaissance, based on the accuracy of intelligence. While the actual operation may fall under the category of any of these missions, the cordon and search is typically oriented at finding insurgents or their caches. The platoon leaders/*platoon commanders* must develop knowledge of enemy organizations based on intelligence of the area. Once intelligence identifies and locates important enemy elements or enemy information, a cordon and search operation may be conducted to collect more detailed information or to neutralize the enemy.

5-27. The tank platoon occupies overwatch or defensive positions to isolate a search area during cordon and search operations. Close coordination and communication with the search team are critical, as is employment of OPs and patrols to maintain surveillance of dead space and gaps in the cordoned area.

5-28. The tank platoon or section must be prepared to take immediate action if the search team or OPs identify enemy elements. Enemy contact may require the platoon to execute tactical movement and linkup; it would then coordinate with other units to destroy the enemy using techniques discussed in chapter 3. Additionally, the tank platoon can conduct vehicle and personnel searches as part of the search operation or traffic control points.

AREA SECURITY

5-29. Area security is established to preserve freedom of movement to position fire support assets, conduct mission command operations, provide for sustainment operations, prevent threat ground reconnaissance, and prevent threat ground maneuver forces from penetrating defensive perimeters established by the platoon leader/*platoon commander*. Area security missions require a significant amount of time and normally operate from outposts such as a base camp or combat outposts. Like an AA or defensive strong point, the base camp also provides some protection because it requires all-round security.

5-30. Established OPs are created for a specified time and purpose. Some OPs are overt (clearly visible) and deliberately constructed. Others are covert and designed to observe an area or target without the knowledge of the local population. Each type of OP must be integrated into supporting direct and indirect fire plans and into the overall observation plan.

5-31. Checkpoints are another technique used to provide area security and gain information. Establish a checkpoint to achieve one or more of the following: control movement, obtain information, or disrupt enemy movement or actions.

TASKS THE PLATOON MONITORS

5-32. The platoon can monitor and help in civil-military operations and other enablers performing civil-military operations, that include military information support operations, Special Operations Forces, legal support, public affairs, engineer, transportation, health service support, military police, security forces, and maneuver units.

CIVIL-MILITARY OPERATIONS

5-33. Tactical-level civil-military operations include support of stakeholders at local levels, and promoting the legitimacy and effectiveness of U.S. presence and operations among locals, while minimizing friction between the military and the civilian organizations in the field. These may include local security operations, processing and movement of displaced civilians, project management and project nomination, civil reconnaissance, and basic health service support.

5-34. Civil affairs operations are those military operations planned, supported, or executed by civil affairs forces that—

- Enhance the relationship between military forces and civil authorities in localities where military forces are present.
- Require coordination with other interagency organizations, intergovernmental organizations, nongovernmental organizations, indigenous populations and institutions, and the private sector.
- Involve application of functional specialty skills that normally are the responsibility of civil government to enhance the conduct of civil-military operations. They involve application of civil affairs functional specialty skills, in areas usually the responsibility of civil government. These activities are fundamental to executing stability tasks.

5-35. Stability emphasizes nonlethal, constructive actions by Service members working among noncombatants. In stability, civil affairs forces work with and through host-nation agencies and other civilian organizations to enhance the host-nation government's legitimacy. Often, civil affairs teams work with or alongside the platoon during stability. A framework for evaluating civil considerations is ASCOPE. (Refer to ADRP 5-0 for further information.) Each consideration is described as follows:

- Areas. Determine the geographic variations in the area of responsibility, the potential military impact, and how it influences the way people live.

- Structures. Describe the manmade structures in which the people live and work; determine those having cultural, religious, and economic significance.
- Capabilities. Determine the ability of various groups to influence the AO and the rest of the population relative to their possible intent to do so determine economic and military potential given the areas and infrastructure.
- Organizations. Determine what informal and formal social, religious, familial, or political organizations exist and their intentions, purposes, and resources.
- People. Determine how the population aligns with organizations and one another; determine if they are likely to be supportive, detrimental, or neutral to the unit's mission.
- Events. Create significant population event template and determine if future activity can be predicted based on pattern analysis.

OTHER

5-36. The platoon may need to monitor and help in the following activities:

- Monitor compliance with an agreement. This involves observing belligerents and working with them to ensure they meet the conditions of one or more applicable agreements.
- Expeditionary forensic collection missions. This involves tasks to support the collection and analysis of materials in an AO and applies to improvised explosive device and non-improvised explosive device events. It also includes collecting, identifying, and labeling portable items for future exploitation, and the collection of fingerprints, DNA, and other biometric data from nontransportable items at a scene, such as a bomb maker's table and chairs. (Refer to ATP 2-22.82 for more information.)

5-37. Support relief operations in a foreign country using the Army to respond with a wide array of capabilities and services to aid authorities in the following types of actions: protecting public health, restoring public order, and helping in disaster recovery, alleviating large-scale suffering, and protecting critical infrastructure.

SECTION IV – TRANSITIONS

5-38. Transitions mark a change of focus between phases or between the ongoing operation and execution of a branch or sequel. Shifting priorities between decisive action tasks, such as from offense to stability, also involves a transition. Transitions require planning and preparation well before their execution to maintain the momentum and tempo of operations. The force is naturally more vulnerable during transitions, thus requiring leaders to establish clear conditions for their execution. Transitions may create unexpected opportunities; they also may make forces vulnerable to enemy threats.

TRANSITION TO THE OFFENSE

5-39. During an operation focused on stability tasks there may be instances where units quickly transition back to operations focused on offensive tasks against irregular forces or defensive tasks to defeat counterattacks. To facilitate the transition, leaders consider an offensive contingency while conducting operation focused on stability tasks. They consider how to generate combat power quickly to take the initiative. It can come from organic, partnered, joint and host nation forces depending on the situation.

TRANSITION TO THE DEFENSE

5-40. Leaders must ensure transitions from stability to defensive tasks are planned. For example, it may be tactically wise for leaders to plan a defensive contingency with on-order offensive missions if certain stability conditions could deteriorate. Leaders in the platoon must be fully trained to recognize activities that would initiate this transition. Indicators to transition include:

- Increased insurgent activity, strength, and combat power.
- Increased insurgent movements.
- An increase in civilian attacks.
- Upcoming key host nation events.
- Concentration of insurgent activities in local or adjoining AO.

TRANSFER OF AUTHORITY

5-41. Often during stability, a relief in place is referred to as a transfer of authority. In addition to the normal responsibilities of a relief, leaders and Service members also must deal with civilians or coalition partners. Planning for a transfer of authority begins as soon as the unit occupies the AO.

5-42. Before the transfer of authority, the departing unit develops a continuity book with the necessary information on the AO. The book should include lessons learned, details about the populace, village and patrol reports, updated maps, and photographs; anything helping the incoming unit master the outgoing unit's operational environment. Computerized databases are suitable. Leaders should ensure these continuity books are updated during the unit's tour of duty. This extensive effort reduces casualties and increases the current and succeeding units' efficiency and knowledge of operations.

Chapter 6

Sustainment/*Logistics*

Sustainment units provide logistics, (consisting of maintenance, transportation, and field services), personnel services, and Army Health Service support to supported units. The platoon leader/*platoon commander* is responsible for supervising sustainment in the platoon. The platoon sergeant is the sustainment operator for the platoon, as the 1SG/*tank leader* is for the company and troop. The platoon sergeant advises the platoon leader/*platoon commander* of logistical requirements during preparation for combat operations. The platoon sergeant also keeps the platoon leader/*platoon commander* informed of the platoon’s status. During combat operations, the platoon sergeant coordinates directly with the 1SG/*tank leader*, informing the 1SG/*tank leader* of the platoon’s supply, maintenance, and personnel requirements. The platoon sergeant is assisted by the other tank commanders and the gunners on the platoon leader’s/*platoon commander’s* and platoon sergeant’s vehicles.

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SECTION I – RESPONSIBILITIES

6-1. The tank platoon must plan, prepare, and execute its portion of the company sustainment plan. The platoon develops its sustainment plan during the mission analysis and refines it in the rehearsal portion of TLP. Rehearsals normally are conducted to ensure the smooth, continuous flow of materiel and services.

6-2. Sustainment responsibilities for the tank platoon include—anticipate, report, and request support requirements through the company and ensure sustainment operations are properly executed when support elements arrive in the platoon area. Normally, the platoon sergeant is in charge of these functions, with guidance and oversight provided

by the platoon leader/*platoon commander*. The platoon sergeant must submit accurate personnel and logistical reports, along with other necessary information and requests.

PLATOON LEADER/*PLATOON COMMANDER*

6-3. The platoon leader/*platoon commander* is ultimately responsible for the sustainment plan and for the condition and performance of the platoon's equipment and materiel. The platoon leader/*platoon commander* works directly with the platoon sergeant to determine specific sustainment requirements of the tactical plan and reports those requirements to the company XO. The platoon leader/*platoon commander* must anticipate sustainment requirements and ensures arrangements are made to provide the necessary support requirements to the platoon during all phases of the operation. In that role, the duties include the following:

- Attends company sustainment rehearsals and ensures the platoon knows what actions to take at the company's resupply points.
- Ensuring, in the platoon's maintenance capabilities, that all platoon vehicles, weapon systems, are operational at all times. The platoon leader/*platoon commander* also ensures that equipment that cannot be repaired at platoon-level is reported to field maintenance team (FMT) as soon as possible using DA Form 5988-E (*Equipment Maintenance and Inspection Worksheet [EGA]*) or DA Form 2404 (*Equipment Inspection and Maintenance Worksheet*).
- Knowing the status of current platoon maintenance activities, including corrective actions for equipment faults, maintenance work orders/*organic* maintenance elements, and requisition of repair parts. The platoon leader/*platoon commander* keeps the commander informed of the platoon's maintenance status.
- Coordinating with the maintenance officer in planning, directing, and supervising unit maintenance for the platoon.
- Developing and supervising an ongoing maintenance training program.
- Ensuring that tank crews have appropriate technical manuals (TMs) on hand and are trained and supervised to complete operator maintenance properly.
- Ensuring that unit PMCS are performed on all assigned equipment per the appropriate operator's manuals.
- Ensuring that drivers are trained and licensed to operate platoon vehicles and equipment.
- Planning and rehearsing a maintenance evacuation plan for every mission.
- The platoon leader/*platoon commander* must know the current logistic status of the platoon, and how quickly each resource (water, fuel, ammunition, subsistence) is being expended or consumed and ensures the platoon sergeant reports the logistics status report to the company XO or 1SG/*tank leader*. This may be required more frequently during periods of increased intensity.
- Must know the basic load and total carrying capacity of Class I water in gallons, Class III bulk fuel in gallons, Class III (P) in quarts for each critical type, Class IV, and Class V by type of ammunition in the platoon.

PLATOON SERGEANT

6-4. The platoon sergeant is the platoon's primary sustainment executor, reporting directly to the platoon leader/*platoon commander*. The platoon sergeant executes the platoon's logistical plan, relying heavily on platoon and company SOPs. The platoon sergeant directly supervises and controls the platoon's assets when available. During preparations of the mission, the platoon sergeant works closely with the platoon leader/*platoon commander* and tank commanders to determine specific support requirements of the tactical plan. The platoon sergeant then ensures proper arrangements are made to provide those support requirements. The platoon sergeant also performs these logistical functions:

- Directing and supervising unit maintenance of platoon equipment, vehicles, and weapon systems. Because time constraints will not allow all equipment to have a PMCS conducted every day, the platoon sergeant must develop a schedule to ensure all equipment is checked in a reasonable time. At a minimum, weapons and vehicles must be checked daily.
- Assist the platoon leader/*platoon commander* with the responsibilities and assuming these responsibilities in the platoon leader's/*platoon commander's* absence.
- Supervising and accounting for platoon personnel during maintenance periods.
- Ensuring that repair parts are used or stored as they are received.
- Collecting reports of the platoon's maintenance status in the field and sending the appropriate consolidated reports to maintenance personnel.
- Tracks changes in consumption of Class I (Subsistence), Class III (Fuel), Class IX (Repair Parts) and expenditure rates of Class V (Ammunition); reports the logistical status report to the XO or 1SG/*tank leader*.
- Maintains accountability and serviceability of all equipment including hand receipts, shortage annexes, and direct exchange of broken equipment.
- Ensuring that vehicles are always topped off with fuel in garrison and that they receive adequate fuel in the field.
- During resupply, the platoon sergeant monitors actions on site and ensures each vehicle commander is tracking actions at the resupply point.
- Rehearses (to include under CBRN conditions) and directs the platoon's casualty evacuation plan. When possible wounded and dead are not evacuated together, and are collected at the company casualty collection point in different areas with deceased outside of line of sight of wounded.
- Directs and supervises the collection, initial identification, and evacuation of human remains to the company casualty collection point.
- Keeping the platoon leader/*platoon commander* informed of the platoon's maintenance and logistics status.
- Must know the basic load and total carrying capacity of Class I water in gallons, Class III bulk fuel in gallons, Class III (P) in quarts for each critical type, Class IV, and Class V by type of ammunition in the platoon.

TANK COMMANDERS AND PLATOON LEADER'S GUNNER

6-5. The tank commanders and the gunner from the platoon leader's/*platoon commander's* tank are the platoon's first-line of sustainment supervisors including maintenance. In large part, the platoon's maintenance status, and thus its combat readiness, depends on their commitment to proper maintenance procedures. Their duties in this area include the following:

- Ensuring that the equipment inspection and maintenance worksheet (DA Form 5988-E or DA Form 2404) is filled out accurately and updated per DA Pam 750-8.
- Ensuring that dispatch records are completed accurately and turned in on schedule.
- Ensuring that the crew is properly trained in PMCS procedures and that PMCS are performed on the vehicle per the appropriate TM. Crews must be made to use the TM to ensure correct checks are being completed.
- Ensuring that, as a minimum, the assigned driver for each vehicle is properly trained and licensed. In preparing for continuous operations, the tank commander must ensure that all crewmembers are trained and licensed as drivers.
- Ensuring that repair parts are installed upon receipt or are stored in authorized locations.
- Ensuring that all Components of End Item and basic issue items/*Stock List-3* are properly marked, stored, maintained, and accounted for.
- Ensuring that each vehicle is always topped off with fuel in garrison and that it receives as much fuel as possible at every opportunity in the field.
- Constantly updating the platoon sergeant on the maintenance and logistics status of the vehicle.
- Conducts vehicle evacuation rehearsals (to include under CBRN conditions).

Note. Detailed vehicle and equipment checks are outlined in every operator's manual and should always be conducted as stated in the manual. Although operators must learn to operate the equipment without referring to the manual, maintenance must be performed using the appropriate manual, not from memory.

SECTION II – FUNCTIONS OF SUSTAINMENT

6-6. Sustainment planning is fully integrated into all operational planning. The company SOP should be the basis for sustainment operations, with planning conducted to determine specific requirements and to prepare for contingencies. The platoon order should address specific support matters of the mission. Deviations from the sustainment SOPs should be covered early in the planning process. In some situations, sustainment

planning begins before receipt of the mission, as part of the ongoing process of refining the sustainment plan.

DEVELOPMENT OF THE PLATOON SUSTAINMENT PLAN

6-7. The platoon leader/*platoon commander* develops the sustainment plan by determining and reporting exactly what is on hand to accurately estimate the support requirements. It is critical for the company to know what the platoon has on hand for designated critical supplies. This process is important not only in confirming the validity of the sustainment plan but also in ensuring the platoon's support requests are submitted as early as possible. The platoon leader/*platoon commander* can formulate the sustainment execution plan and submit support requests based on the results of the maneuver plan.

6-8. The sustainment plan should provide answers to operational questions such as the following:

- Types of support. Based on the nature of the operation and specific tactical factors, what types of support will the platoon need?
- Quantities. In what quantities will this support be required?
- Will emergency resupply (Class III and V) be required during the battle?
- Does this operation require prestocked supplies?
- Threat. What are the composition, disposition, and capabilities of the expected enemy threat? How will these affect sustainment plan during execution?
- Where and when will the expected contact occur?
- What are the platoon's expected casualties and vehicle losses based on the nature and location of expected contact?
- What impact will the enemy's special weapons capabilities (such as CBRN) have on the battle and on expected sustainment requirements?
- Terrain and weather. How will terrain and weather affect sustainment plan during the battle?
- What ground will provide the best security for maintenance and casualty collection points?
- What are the platoon's vehicle and casualty evacuation routes?
- What are the company's dirty routes for evacuating contaminated personnel, vehicles, and equipment?
- Time and location. When and where will the platoon need sustainment?
- Based on the nature and location of expected contact, what are the best sites for the casualty collection point?
- Requirements. What are the support requirements, by element and type of support?
- Which section has priority for emergency Class III resupply?
- Which section has priority for emergency Class V resupply?

- Risk. Will lulls in the battle permit support elements to conduct resupply operations in relative safety?
- Resupply techniques. Based on information developed during the sustainment planning process, which resupply technique should the platoon use?

RESUPPLY METHODS

6-9. Resupply operations fall into one of two methods of resupply: planned and emergency. Examples of planned resupply to maintain routine resupply operations include LOGPAC, caches, modular system exchange (like flatrack exchange), or pre-positioned supplies. The company and platoon SOP should specify cues and procedures for each method. The platoon rehearses resupply operations during platoon training exercises. The actual method selected for resupply in the field depends on mission variables.

ROUTINE RESUPPLY

6-10. The LOGPAC is a simple and efficient method to accomplish routine resupply operations. These operations include regular resupply of items in Classes I, III, V, and IX and of any other items requested by the company. LOGPAC is planned at battalion level and normally takes place at every opportunity. The LOGPAC comprises company and forward support company assets that transport supplies to the company.

6-11. The company supply sergeant/*property noncommissioned officer* along with the battalion logistics officer and forward support company assembles the LOGPAC in the battalion field trains area under the supervision of the designated personnel, typically a representative from the battalion logistics officer.

6-12. Once the LOGPAC is prepared for movement, the supply sergeant/*property noncommissioned officer* accompanies the vehicles forward from the field trains command post/*field trains* and convoy to either the combat trains command post/*combat trains* if established or to the logistics release point. The 1SG/*tank leader* or the representative meets the LOGPAC and guides it to the company resupply point. The company then executes replenishment, utilizing either the tailgate or service-station resupply technique (see figure 6-1 and figure 6-2 on page 6-8).

6-13. The tactical situation dictates which technique of resupply the platoon uses: tailgate, service station, a variation of one type, or a combination of both types. The situation also dictates when to resupply. Generally, the platoon should attempt to avoid resupply during the execution of offensive operations; resupply should be done during mission transition. Resupply is unavoidable during defensive missions of long duration.

Tailgate Resupply

6-14. In the tailgate technique, the 1SG/*tank leader* or designated person will bring the LOGPAC to individual tanks (see figure 6-1). This method is used when routes leading to vehicle positions are available, terrain permits movement of multiple vehicles to each

platoon position and the unit is not under direct enemy observation and fire. Individual tanks can remain in combat position or back out a short distance to allow vehicles carrying Class III fuel and Class V ammunition to reach them. Individuals can rotate through the feeding area, pick up mail and fill or exchange water cans. Service members killed in action and their personal effects are turned over to the 1SG/*tank leader* or designated person for further movement to the company casualty collection point. This technique is time-consuming, but it is useful in maintaining stealth during defensive missions because tanks do not have to move. If necessary, supplies can be hand carried to vehicle positions to further minimize signatures.

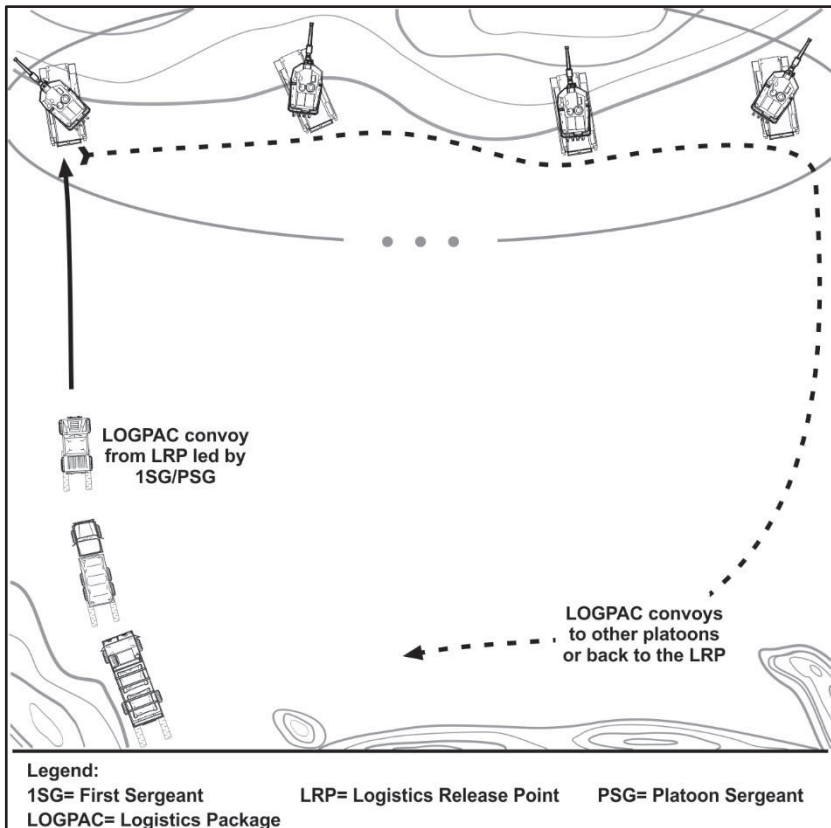


Figure 6-1. Tailgate resupply

Service Station Resupply

6-15. In the service-station technique, vehicles move to a designated location to rearm, refuel and resupply, or turn in damaged equipment. The platoon leader/*platoon commander* will direct the platoon sergeant to rotate vehicles or sections through the resupply site based on the enemy situation and shortages in the platoon. This process will continue until the entire platoon has been replenished (see figure 6-2 on page 6-8).

6-16. When using this technique, the vehicles will enter the resupply point following a one way traffic flow and only vehicles requiring maintenance will stop at the maintenance holding area. The maintenance element can help the operator or crew in verifying PMCS of their vehicles. Minor deficiencies can be corrected on the spot with available tools, repair parts, and battle damage assessment repair techniques.

6-17. Each vehicle will rotate through the supply location, with teams rotating through to eat, pick up mail, and refill or exchange water cans. Service-station resupply is inherently faster than the tailgate method because vehicles must move and concentrate, however, it can create security problems. During defensive missions, the platoon leader/*platoon commander* must create a plan to rotate the platoon based on shortages and must be careful not to compromise the location of fighting positions.

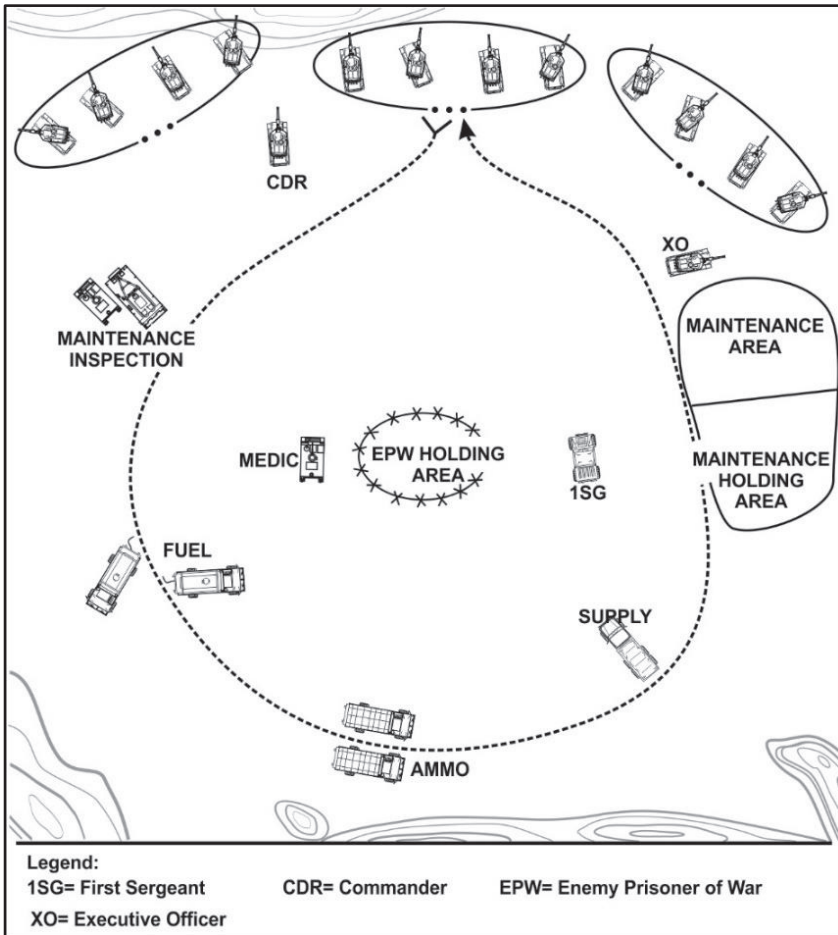


Figure 6-2. Service station resupply

EMERGENCY RESUPPLY

6-18. Emergency resupply, also known as immediate resupply, normally involves Class III and Class V, and is executed when the platoon has such an urgent need for resupply that it cannot wait for the routine LOGPAC. Emergency resupply procedures start with immediate redistribution of ammunition in individual vehicles, followed by cross-leveling of ammunition in the platoon. It is better to have four tanks with 20 rounds of ammunition each than two tanks with 40 rounds and two others with none.

6-19. Once requested through the commander or ISG/tank leader, an emergency resupply can be conducted using either the service station or tailgate technique. Based on the enemy situation, the platoon may have to conduct resupply while in contact with the enemy and procedures may have to be adjusted. The quickest appropriate means is normally used out of the two techniques used to resupply units in contact:

- Limited supplies are brought forward to the closest concealed position, where the tailgate technique of resupply is used. Individual vehicles or sections disengage and move to a resupply point, obtain their supplies, and then return to the fight. This is a version of the service-station technique.
- Individual vehicles or sections disengage and move to a resupply point, obtain their supplies, and then return to the fight. This is a version of the service-station technique.

PRE-POSITIONED RESUPPLY OR CACHE

6-20. As with all operations METT-TC is taken into consideration and in some instances will require the need for pre-positioned or cached supplies. Units will most likely require pre-positioned supplies before conducting defensive operations, or occupation of a BP. During a movement or during offensive operations platoons will likely “cache” supplies not necessary during the operation, but retrieved later by the “caching” unit, or another friendly unit requiring those cached supplies.

6-21. Normally, Class V (ammunition) is positioned next to or within a vehicle’s fighting position. This enables the tank crew to resupply during an engagement without displacing. Another technique is to locate Class V supplies en route to or within a successive BP. Use of this method requires consideration of security procedures to safeguard the pre-positioned supplies.

6-22. All tank commanders must know the exact location of pre-positioned supplies and cache sites and take measures to ensure the survivability of these sites. The platoon leader/*platoon commander* must know the company plan to remove or destroy these resupply sites if required. Security of pre-positioned or cached supplies requires planning to prevent enemy forces from destroying or sabotaging supplies. Security risks always exist when returning to the resupply site, and if not under persistent surveillance the site must be cleared and secured upon friendly forces retrieval of supplies at the site. Friendly forces take extreme caution when moving to unobserved cache locations to prevent being ambushed. Normally friendly forces inspect the site for signs of enemy presence that may have compromised the site; it may contain booby traps or may be under enemy observation.

REFUEL ON THE MOVE

6-23. Pre-positioning of supplies in the offense is normally limited to refueling. The refuel on the move (known as ROM) technique is planned and organized at battalion or higher level to sustain vehicles during long movements. The ROM can be tailored to the tactical situation. The two primary purposes of a ROM are to:

- Provide a “fuel splash” for convoy movements to extend maneuverability to reach the intended destination when complete refueling operations are either not practical or unneeded.
- Provide fuel between engagements to extend the time that forces can spend on the objective.

6-24. Security for ROM sites is normally maintained using battalion assets. If enough fuel-hauling vehicles are available, individual vehicles, sections, platoons, or companies/troops proceed directly to their specified fuel vehicle and either top off or receive an amount of fuel specified in the OPORD. If the number of fuelers is limited, vehicles either assume a herringbone formation or occupy hasty defensive positions until they can top off.

UNIT BASIC LOAD

6-25. The quantity of supplies required to be on hand and moved by a unit or formation. The quantity of each item of supply in a basic load is based on the number of days the unit may have to sustain itself in combat without resupply. The commander dictates minimum load requirements; however, the commander or the unit SOPs should specify most items.

COMBAT LOAD

6-26. The combat load is minimum mission-essential equipment and supplies are determined by the command responsible for carrying out the mission, required for Service members to fight and survive immediate combat operations. Like the basic load, the platoon’s combat load is specified by higher HQ. For Class V (ammunition), the combat load is the standard quantity and type of munitions and individual weapon, crew-served weapon or weapon platform and its tank are designed to hold.

CLASSES OF SUPPLY

6-27. The platoon sergeant requests supplies and delivers them to the platoon. The platoon leader/*platoon commander* establishes priorities for delivery; however, combat demands that Class I, III, V, and IX supplies and equipment take priority because they are the most critical to successful operations. The classes of supply are—

- Class I. Rations, water, and ice.
- Class II. Clothing, individual equipment, MOPP suits, tents, tool sets, administrative and housekeeping supplies, and equipment.
- Class III. Petroleum, oils, and lubricants.

- Class IV. Construction and engineering materials, such as pickets, sandbags, and concertina wire.
- Class V. Ammunition and mines, including explosives.
- Class VI. Personal-demand items normally sold through the exchange system, which can include candy, soaps, and small recreational items.
- Class VII. Major end items.
- Class VIII. Medical material, including medical peculiar repair parts, optical eyewear, inserts, and protective lenses supplied through the battalion medical platoon.
- Class IX. Repair parts and documents required for equipment maintenance operations.
- Class X. Materials to support nonmilitary programs.

MAINTENANCE

6-28. The purpose of the Army and Marine Corps maintenance system is to generate or regenerate combat power and to preserve the equipment to enable mission accomplishment. The Army and Marine Corps employs field and sustainment levels of maintenance as described in the paragraphs 6-29 through 6-33.

FIELD MAINTENANCE

6-29. Field maintenance is on-system maintenance repair and return to the user. This includes maintenance actions performed by the operator and is the responsibility of the unit assigned the equipment. It is performed by the operators and mechanics provided by the forward support company of the brigade support battalion/*performed by the operators and mechanics within the battalion's organic maintenance platoon*. Because the tank's design allows rapid modular replacement of parts, many faults can be corrected as far forward as METT-TC allows, and the vehicle returned to the platoon, with minimum delay.

6-30. When the operator identifies a problem beyond the operator's level of maintenance capability, the operator notifies the chain of command so the problem can be isolated and corrected. The FMT provided by the forward support company/*Battalion Maintenance Officer* has trained mechanics who are authorized to perform field maintenance tasks as prescribed in the TMs for the vehicle.

6-31. The built-in diagnostic tests on the M1A2 system enhancement package (Built in Test/Fault Isolation Test) facilitate rapid replacement of defective components and systems. When the crew isolates a problem using these tests, the organizational mechanic can verify the fault as soon as arrival on site and replaces the component without further diagnostic testing.

6-32. Other functions performed by field maintenance technicians consist of repair or replacement of parts, assemblies, components, and limited fabrication. Maintenance support teams from direct support units are usually located forward with the battalion

field trains if METT-TC allows. These support teams may go forward to fix disabled equipment on site, but they are limited in what they can fix and where they can go.

6-33. To determine if a task is operator/crew repair, the operator should ask the following questions:

- Can the fault be detected while performing before, during, and after operations PMCS?
- Can fault be isolated to a single component utilizing the TM, embedded diagnostics or visual inspection?
- Can task be done without external lift?
- Can task be completed without tools or with the tools available on the platform?
- For battle damage assessment repair, can systems be temporarily repaired using FMT battle damage assessment repair kit?

Note. If the answer is yes, the operator/crew can repair the fault. If the answer is no, the platform should be passed on to maintainer repair or if METT-TC allows, have the combat maintenance team repair the fault on site.

SUSTAINMENT MAINTENANCE

6-34. Sustainment maintenance is off-system component repair or end item repair and entails operations employing job shops, bays, or production lines; Sustainment maintenance is performed by national level maintenance providers to include Army Materiel Command/*Marine Corps Systems Command* to return items to a national standard and to execute maintenance actions that cannot be performed at field level of maintenance.

VEHICLE/EQUIPMENT PREVENTIVE MAINTENANCE CHECKS AND SERVICES

6-35. The maintenance of equipment and weapons is continuous. All Service members must know how to maintain their equipment and weapons according to the related TM. The platoon leader/*platoon commander*, platoon sergeant, and tank commanders must understand how to conduct maintenance for every piece of equipment in the platoon.

6-36. Maintenance includes inspecting, testing, servicing, repairing, requisitioning, recovering, and evacuating vehicles and equipment. Maintenance at the platoon level comprises thorough PMCS and accurate reporting of maintenance problems to the company.

6-37. Maintenance and the early identification of problems prevent equipment down-time and the reduction of combat effectiveness. The result of good PMCS is a properly completed equipment inspection and maintenance forms. These forms (DA Form 2404 or DA Form 5988-E) are the primary means through which the platoon obtain maintenance support or repair parts. The forms, with their input into Global

Combat Support System-Army/*Global Combat Support System-Marine Corps at higher echelons*, follow a pathway from crew level to the brigade support area/*combat service support area* and back. Per unit SOP, the company XO or 1SG/*tank leader* supervises the flow of these critical maintenance documents and parts. The flow of reporting and repairing equipment includes the following:

- Operator conducts PMCS on the vehicle or equipment and records faults on a DA Form 5988-E or DA Form 2404.
- The tank commanders collect the maintenance forms and send them digitally or give them to the platoon sergeant, who consolidates the forms for the platoon.
- The platoon sergeant forwards an electronic version or gives a hard copy of the forms to the XO or 1SG/*tank leader company maintenance chief*, who reviews and gives to the mechanics to verify problems and deficiencies and requests parts needed for maintenance and repairs.
- The electronic versions of the forms are consolidated at company level and then transmitted to the battalion and its supporting FMT.
- During the next LOGPAC operation, the completed hard copy forms are returned to the FMT to document completion of the repair.
- In the brigade support area/*combat service support area*, required repair parts are packaged for delivery during the next scheduled resupply or through emergency resupply means.
- If the repair or installation of the part requires higher skills and equipment than the operator, a FMT/*maintenance contact team (MCT)* is dispatched to assess the repair and to install the part on site.

6-38. The unit SOP should detail when maintenance is performed, to what standards, and who inspects it. The tank commander is most often the one who inspects maintenance work, with the platoon sergeant and platoon leader/platoon commander conducting spot-checks. Inoperative equipment is fixed as far forward as possible if METT-TC allows. When a piece of equipment is damaged, it should be inspected to see if it can be repaired on the spot. If equipment cannot be repaired forward, it is evacuated immediately.

SCHEDULED SERVICES

6-39. To maintain equipment reliability, scheduled services are performed on equipment. Equipment services are specified maintenance actions performed when required where equipment, components, and systems are routinely checked, adjusted, lubed, and so on, according to engineer specifications. Maintenance personnel use scheduled services to replace faulty items and avoid projected component failures based on analysis and engineering documentation.

RECOVERY OF EQUIPMENT

6-40. Recovery operations on the battlefield and in general can be hazardous. The vehicle commander must integrate risk management and ensure safety is a top priority

for the recovery mission. The current tactical situation will determine if on-site repair or evacuation is necessary of downed equipment. Maintenance assets are limited on the battlefield and it is imperative that operators/crews perform expedient or authorized repairs within their capabilities immediately rather than requesting maintenance personnel to perform simple mechanic tasks. Most expedient or authorized repairs are in the TMs.

6-41. Self-recovery operations start at the location where the equipment becomes disabled. If the tactical situation permits, the operator/crew will assess the damage, use the TM to perform troubleshooting procedures and use the basic issue items/*Stock List-3* and additional authorized equipment items to perform self-recovery. If the damaged vehicle cannot be self-recovered, the vehicle commander will immediately contact the platoon leader/*platoon commander* or platoon sergeant to start the like-vehicle recovery process. The platoon leader/*platoon commander* will decide if another platoon vehicle can evacuate the damaged vehicle for a short distance to the maintenance collection point. Like-vehicle recovery is METT-TC dependent.

6-42. When self-recovery and like-vehicle recovery are not practical, the platoon leader/*platoon commander* or the platoon sergeant will contact the company XO or ISG/*tank leader* to coordinate dedicated recovery assets. In most cases, a recovery vehicle from the supporting forward support company/*organic company trains* will evacuate the damaged vehicle. If possible, the tank platoon leader/*platoon commander* will move the vehicle to a covered position that will allow the recovery vehicle to reach it without exposing the recovery team and the crew of the downed vehicle to enemy fire. Evacuate the vehicle to closest collection point or to the maintenance collection point as necessary.

6-43. In most situations, evacuation is necessary when a damaged vehicle cannot be repaired on site within the time specified in the company SOP or when evacuation is the only means available to prevent capture or destruction by the enemy. When a vehicle needs to be evacuated, the platoon leader/*platoon commander* or platoon sergeant reports its exact location, the vehicle type, and the extent of damage, if known, on the company network to personnel designated in the unit SOP. The crew should remain with the vehicle to help in evacuation and repair, to provide security, and to return the repaired vehicle to the platoon as soon as possible.

BATTLE DAMAGE ASSESSMENT REPAIR

6-44. Battle damage assessment repair procedures apply to field maintenance procedures only and depend on operational variables, the extent of damage, time allowances, and available personnel with required skills, availability of parts, tools, and materials. The platoon can find the use of battle damage assessment repair in the logistics section of the OPORD. This will provide the tank commanders and crew with a clear understanding of when at what risk level they are able to perform battle damage assessment repair.

6-45. When maintenance resources are limited on the battlefield, crewmembers must complete the repairs within their capabilities rather than request maintenance personnel

to complete simple mechanical tasks. On the battlefield, the objective of battle damage assessment repair is to return the system to an operational condition with enough combat capability to get the mission accomplished. If a broken component does affect the vehicle's ability to shoot, move, communicate and is not a safety concern, the equipment should not be repaired until the equipment is returned to maintenance where standard repairs can be conducted.

6-46. Battle damage assessment repair is a set of simple, expedient, repairs that can be rapidly implemented on disabled equipment to return it to an operational condition in wartime by expediently repairing, bypassing, and restoring minimum function to essential systems with minimal resources. The tank commander and crew can conduct battle damage assessment repair by performing shortcuts, bypassing, or performing expedient repairs. Refer to ATP 4-31/MCRP 4-11.4A.

6-47. The tank commander decides when and if battle damage assessment repair is performed during combat and should consider the safety of the crew and personnel, current operational variables, and repair level needed. Tank crews will perform an assessment to prevent further damage to equipment and personnel. If within the forward line of troops, the crew must attempt to move the vehicle to a concealed or covered position to prevent additional damage and to protect the crew. If the vehicle is not self-recoverable, use any like or heavier vehicle to recover the vehicle to conceal it.

6-48. The following 11 basic steps are key to enable a systematic assessment for crewmembers:

- Visually inspect interior and exterior for damaged parts and systems.
- Visually determine if vehicle main systems appear to be operable.
- Perform equipment self-test function—using a built-in test, built-in test equipment, and a function test.
- Assess system performance (exercise each system if engine can be safely started).
- Determine which subsystems are affected.
- Determine if crewmembers can repair the damage. (Are there enough crewmembers with the required skills available? And does the current tactical situation allow repairs at the current location?).
- Estimate the repair time (by crew and by a maintenance team).
- Estimate the number and type of repair personnel needed and the associated risk. Ensure command approval to perform repairs.
- Determine what materials are required.
- Determine what the vehicle limitations are after repairing using battle damage assessment repair or standard repair.
- Determine the recovery status, self/like/dedicated.

CONDUCTING FIELD EXPEDIENT REPAIRS

6-49. The operator and crew will prepare and provide the initial damage assessment and reports to the vehicle commander. If the vehicle is in hostile fire range, self-recovery

followed by like-vehicle recovery may be necessary to recover the vehicle to a safe location. At this time, the operator/crew will assess the situation and determine what type of maintenance is required. The vehicle commander will report the results of the crew assessment to the platoon leader/*platoon commander* to receive further guidance.

6-50. The assessment report will include the known cause of the vehicles damage or lack of fire power, or communication failures. The vehicle commander will let the platoon leader/*platoon commander* know if repairs by the crew are possible, the risk level, the total estimated time of repairs, and the list of functions that the crew can repair. If directed, the crew will proceed to make any field expedient repairs. Field expedient repairs normally consist of restoring fire power, communications, or vehicle mobility within the limits of the crew's skills and with what tools and materials are on hand. The crew will attempt to make the vehicle self-recoverable. If the repairs are beyond the crews capabilities, the vehicle commander will request maintenance assistance per the unit SOP.

6-51. The platoon leader/*platoon commander* will give directives to the vehicle commander to either repair or will call a FMT/MCT forward for assistance. The platoon leader/*platoon commander* will provide the FMT/MCT with enough details of the battle damaged vehicle to bring forward required repair parts, special tools or a recovery asset if available and if METT-TC allows. The FMT/MCT will assess the equipment to verify the operator's/crew's damage assessment for accuracy or make assessments for other expedient repair methods. If the tactical situation allows and all critical repairs can be conducted with the crew's skills, tools, and equipment, the FMT/MCT (helped by the crew) will proceed with on-site repair.

ARMY HEALTH SYSTEM SUPPORT/HEALTH SERVICE SUPPORT

6-52. Army Health System support to maneuver forces is provided by organic medical assets. The focus of the medical effort at the BCT-level and below is to rapidly locate, acquire, treat, stabilize, and evacuate patients. The Army Health System is defined as a component of the Military Health System responsible for operational management of the health service support and force health protection missions for training, predeployment, deployment, and postdeployment operations.

CASUALTY OPERATIONS

6-53. Casualty operations includes casualty reporting, casualty notification, casualty assistance, line-of-duty determination, disposition of remains, disposition of personal effects, military burial honors, and casualty mail coordination.

6-54. Unit SOPs and OPORDs must address first aid procedures and casualty evacuation in detail, including aid for chemical casualties with particular emphasis on lifesaving tasks. They should cover the duties and responsibilities of essential personnel, the evacuation of CBRN contaminated casualties (on routes separate from noncontaminated casualties), and the priority for manning essential weapons and positions. They should specify preferred and alternate methods of evacuation and make

provisions for retrieving and safeguarding the weapons, ammunition, and equipment of casualties. Slightly wounded personnel are treated at the appropriate role of care and returned to duty as soon as possible. Company medics evaluate the sick and wounded and either treat or evacuate as necessary. Medical and casualty evacuations should be rehearsed like other critical parts of an operation.

CASUALTY CARE

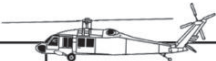
6-55. When combat begins and casualties occur, the platoon first must provide aid to those wounded in action. Casualty care is provided by the company combat medics/*corpsmen* who are assisted by nonmedical personnel performing first aid procedures to alleviate potential life-threatening situations and ensure maximum survivability on the battlefield. This support is most commonly provided by enlisted personnel and includes first aid (self-aid or buddy aid), enhanced first aid (by the combat lifesaver [CLS]), and emergency medical treatment (company medic/*corpsman*). Casualties are cared for at the point of injury or under nearby cover and concealment.

MEDICAL EVACUATION

6-56. MEDEVAC is the term used to refer to movement of casualties by air or ground utilizing medical vehicles or aircraft. MEDEVAC operations normally involve the initial movement of wounded or injured Service members to the nearest medical treatment facility. MEDEVAC includes the provision of en route medical care, whereas casualty evacuations might not provide medical care during movement. (Refer to ATP 4-02.5 and ATP 4-02.2, *MCTP 3-40A* and *MCRP 3-40A.7* for more information.) (See table 6-1a and table 6-1b, graphic training aide [GTA] 08-01-004 MEDEVAC Request Card, on the 9-line request for MEDEVAC procedures).

6-57. When possible, medical platoon/*combat trains* or *field trains* ambulances provide evacuation and en route care from the point of injury or the company's casualty collection point to the battalion aid station. The ambulance team supporting the company works in coordination with the senior combat medic/*corpsman* supporting the company. In mass casualty situations, nonmedical vehicles may be used to help in casualty evacuation as directed by the company commander or leader. However, plans for use of nonmedical vehicles to perform casualty evacuations should be included in the unit SOP.

Table 6-1a. Graphic Training Aide 08-01-004 (front)

MEDEVAC REQUEST CARD		GTA 08-01-004	
LINE	ITEM	EVACUATION REQUEST MESSAGE	
1	Location of Pickup Site.		
2	Radio Frequ., Call Sign, & Suffix.		
3	NO. Patients by Precedence.		
4	Special Equipment Required.		
5	Number of Patients by Type.		
6	Security of Pickup Site (Wartime).		
6	Number and Type of Wound, Injury, Illness (Peacetime).	-----	
7	Method of Marking Pickup Site.		
8	Patient Nationality and Status.		
9	NBC Contamination (Wartime).		
9	Terrain Description (Peacetime).	-----	

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Table 6-1b. Graphic Training Aide 08-01-004 (back)

LINE ITEM	EXPLANATION
1. Location of Pickup Site.	Encrypt coordinates. When using the <i>DRYAD Numeral Cipher</i> , the same <i>SET line</i> will be used to encrypt grid zone letters and coordinates. To preclude misunderstanding, a statement is made that grid zone letters are included in the message (unless unit SOP specifies its use at all times).
2. Radio Frequency, Call Sign, Suffix.	Encrypt the frequency of the radio at the pickup site, <i>not</i> a relay frequency. The call sign (and suffix if used) of person to be contacted at the pickup site may be transmitting in the clear.
3. No. of Patients by Precedence.	Report only applicable info & encrypt brevity codes. A = Urgent, B = Urgent-Surg, C = Priority, D = Routine, E = Convenience (If 2 or more categories are reported in same request, insert the word "break" btwn each category.)
4. Spec Equipment.	Encrypt applicable brevity codes. A= None, B= Hoist, C= Extraction equipment, D= Ventilator.
5. No. of Patients by Type.	Report only applicable information and encrypt brevity code. If requesting MEDEVAC for both types, insert the word "break" between the litter entry and ambulatory entry: L + # of Pnt -Litter, A + # of Pnt - Ambul (sitting).
6. Security Pickup Site (Wartime).	N= No enemy troops in area, P= Possible enemy troops in area (approach with caution), E= Enemy troops in area (approach with caution), X= Enemy troops in area (armed escort required).
6. Number and type of Wound, Injury, Illness (Peacetime).	Specific information regarding patient wounds by type (gunshot or shrapnel). Report serious bleeding along with patient blood type, if known.
7. Method of Marking Pickup Site.	Encrypt the brevity codes, A= Panels, B= Pyrotechnic signal, C= Smoke Signal, D= Non, E= Other.
8. Patient Nationality and Status.	Number of patients in each category need not be transmitted. Encrypt only applicable brevity codes. A= US military, B= civilian, C= Non-US military, D= Non-US civilian, E= EPW.
9. NBC Contamination (Wartime).	Include this line only when applicable. Encrypt the applicable brevity codes, N = nuclear, B = biological, C = chemical.
9. Terrain Description (Peacetime).	Include details of terrain features in and around proposed landing site. If possible, describe the relationship of site to a prominent terrain feature (lake, mountain, tower).
Reference: ATP 4-02.2, <i>Medical Evacuation</i> .	

CASUALTY EVACUATION

6-58. Casualty evacuation is the movement of casualties aboard nonmedical vehicles or aircraft. When possible, nonmedical vehicles and aircraft should be augmented with a combat medic/*corpsman* or CLS. The type of en route monitoring or medical care or first aid provided may also be limited. Casualty evacuation should only be used in extreme emergencies or when the MEDEVAC system is overwhelmed.

WARNING

Casualties transported in this manner may not receive proper en route medical care or be transported to the appropriate medical treatment facility to address the patient's medical condition. If the casualty's medical condition deteriorates during transport, or the casualty is not transported to the appropriate medical treatment facility, an adverse impact on the prognosis and long-term disability or death may result.

6-59. Each member of the platoon should have a copy of DD Form 1380, *Tactical Combat Casualty Care (TCCC) Card* (see figure 6-3) in their possession. The combat medic/corpsman makes the assessment, administers initial medical care, initiates the TCCC card then requests evacuation or returns the individual to duty. (Refer to AR 40-66/MCTP 3-40A for details and instructions on completing the form.)

TACTICAL COMBAT CASUALTY CARE (TCCC) CARD		BATTLE ROSTER #: Dc2270																																				
EVAC: <input checked="" type="checkbox"/> Urgent <input type="checkbox"/> Priority <input type="checkbox"/> Routine		EVAC: <input type="checkbox"/> Urgent <input type="checkbox"/> Priority <input type="checkbox"/> Routine																																				
NAME (Last, First): DOE, LARRY LAST 4: 2270		Treatments: (X all that apply, and fill in the blank) Type																																				
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Mechanism of Injury: (X all that apply) <input type="checkbox"/> Artillery <input type="checkbox"/> Blunt <input type="checkbox"/> Burn <input type="checkbox"/> Fall <input type="checkbox"/> Grenade <input checked="" type="checkbox"/> GSW <input type="checkbox"/> IED <input type="checkbox"/> Landmine <input type="checkbox"/> MVC <input type="checkbox"/> RPG <input type="checkbox"/> Other:		A: <input checked="" type="checkbox"/> Intact <input type="checkbox"/> NPA <input type="checkbox"/> CRIC <input type="checkbox"/> ET-Tube <input type="checkbox"/> SGA																																				
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Figure 6-3. Tactical Combat Casualty Care Card

Crew Responsibilities

6-60. It is the tank commander's responsibility to make sure that wounded in action crewmen receive immediate first aid and that the platoon leader/*platoon commander* or platoon sergeant is notified of all casualties. The use of crewmen who are trained as CLS is absolutely critical. As a minimum, one member of each tank crew must be a trained CLS. Ideally, however, each crewman should be a CLS. According to unit SOP, tank commanders need to mark their vehicles so that the unit combat medic/corpsmen can identify where casualties are located and who has priority.

Evacuation Procedures

6-61. If wounded crewmen require evacuation, the platoon leader/*platoon commander* or platoon sergeant takes one of the following steps:

- Coordinate with the 1SG/*tank leader* or company combat medic/corpsman for ground evacuation.

- Coordinate with the company commander for casualty evacuation using organic platoon assets.
- Coordinate with the 1SG/*tank leader* or company commander for MEDEVAC.

6-62. Regardless of the method of evacuation, all tank commanders must have the necessary sustainment graphics available, including casualty collection points for the company or combined arms battalion/squadron. Evacuation procedures must be included in the platoon plan and should be rehearsed as part of mission preparation.

6-63. Aeromedical, if it is available, is preferred because of its speed. The platoon leader/*platoon commander* or platoon sergeant coordinates with higher HQ and then switches to the designated frequency to coordinate directly with aeromedical assets for either MEDEVAC or general aviation assets for casualty evacuation. The platoon leader/*platoon commander* or platoon sergeant must pick a relatively flat, open, and concealed position for the aircraft's landing zone. The location should be given to the aircraft by radio and marked with colored smoke (verified by the pilot) as the aircraft approaches the area. The platoon provides local security of the landing zone until the evacuation is complete.

Actions Following Evacuation

6-64. DA Form 1156, *Casualty Feeder Card* (see figure 6-4a and figure 6-4b on page 6-22), are used to report those Service members who have been killed and recovered, and those who have been wounded. This form also is used to report killed in action Service members who are missing, captured, or not recovered. Service members with the most knowledge of the incident should complete the witness statement. This information is used to inform the Service member's next of kin and to provide a statistical base for analysis of friendly or enemy tactics. The 1SG/*tank leader* ensures a completed DA Form 1156 is forwarded to the battalion personnel staff officer, who then enters the data into the Defense Casualty Information Processing System.

*CASUALTY TYPE		CASUALTY FEEDER CARD		* Indicates required fields.	
<input checked="" type="checkbox"/> HOSTILE	<input type="checkbox"/> PENDING	For use of this form, see AR 638-8 the proponent agency is DCS, G-1.		<input checked="" type="checkbox"/> PERSONNEL TYPE	
<input type="checkbox"/> NON-HOSTILE		*SSN	123-45-6789	*RANK	SGT
*CASUALTY STATUS		*NAME	Paul Doe		<input checked="" type="checkbox"/> MILITARY
<input type="checkbox"/> NSI	<input type="checkbox"/> DECEASED	*SERVICE	Army	UIC	<input type="checkbox"/> CONTRACTOR
<input type="checkbox"/> SI	<input type="checkbox"/> DUSTWUN	*UNIT	3-49AR Cco.		<input type="checkbox"/> CIVILIAN
<input type="checkbox"/> VSI	<input checked="" type="checkbox"/> PENDING	*INFLECTING FORCE (<i>hostile</i>)	<input checked="" type="checkbox"/> ENEMY	<input type="checkbox"/> ALLY	<input type="checkbox"/> US (<i>buddy</i>)
DUSTWUN/MISSING LAST SEEN (DATE/TIME/PLACE)		REMAINS: VISUAL ID ID BY:			<input type="checkbox"/> YES
IDENTIFYING MARKS (<i>tafoos, scars</i>)		MEANS USED:			<input checked="" type="checkbox"/> UNK
*CIRCUMSTANCES		Gun shot to right arm from sniper.		<input type="checkbox"/> NO	
				*INCIDENT DATE/TIME 20151031	
				*PLACE OF INCIDENT Afghanistan	
				GRID 123456	
				DEATH DATE/TIME	
				PLACE OF DEATH	
				PRONOUNCED BY	
DA FORM 1156, JUN 2015		PREVIOUS EDITIONS ARE OBSOLETE.		AFD LC v1.01	

Figure 6-4a. DA Form 1156, Casualty Feeder Card (front)

CASUALTY TYPE		INTERCEPTOR BODY ARMOR (IBA)		HOSPITAL	
VEHICLE GROUP/TYPE <input type="checkbox"/> HMMWV <input type="checkbox"/> STRYKER <input type="checkbox"/> APC <input type="checkbox"/> TRACK <input type="checkbox"/> ENG <input type="checkbox"/> LAV <input type="checkbox"/> MTV <input type="checkbox"/> PLS <input type="checkbox"/> ARTILLERY <input type="checkbox"/> HELICOPTER <input checked="" type="checkbox"/> OTHER <u>M1 Tank</u> UP-ARMORED <input type="checkbox"/> OTHER <input type="checkbox"/> NO		<input type="checkbox"/> PASGT <input type="checkbox"/> OTV <input checked="" type="checkbox"/> NONE <input type="checkbox"/> OTHER		<input type="checkbox"/> DIED IN <input type="checkbox"/> DIED OUTSIDE	
POSITION (aboard) _____ HOR (if known) _____		ATTACHMENTS <input type="checkbox"/> THROAT <input type="checkbox"/> GROIN <input type="checkbox"/> YOKE/COLLAR <input type="checkbox"/> DAP <input type="checkbox"/> SAPI HELMET <input type="checkbox"/> ACH <input type="checkbox"/> MICH <input type="checkbox"/> OTHER <input type="checkbox"/> PASGT <input checked="" type="checkbox"/> CVC <input type="checkbox"/> NONE <input type="checkbox"/> SHELL <input type="checkbox"/> NO SHELL <input type="checkbox"/> VISOR		INVESTIGATION INITIATED <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> PENDING TRAINING DUTY RELATED <input type="checkbox"/> YES <input type="checkbox"/> NO	
LEVEL _____ SIGNATURE OF PREPARER <u>SFC Larry Doe</u>		EYE PROTECTION <input type="checkbox"/> SWD <input type="checkbox"/> BLPS <input type="checkbox"/> SPECS <input checked="" type="checkbox"/> OAKLEY <input type="checkbox"/> WILEY <input type="checkbox"/> ESS <input type="checkbox"/> OTHER <input type="checkbox"/> NONE		DUTY STATUS WEAPONS <input type="checkbox"/> IED <input type="checkbox"/> VBIED <input type="checkbox"/> SVBIED <input type="checkbox"/> RPG <input type="checkbox"/> SAF <input type="checkbox"/> GRENADE <input type="checkbox"/> MORTAR <input checked="" type="checkbox"/> OTHER	
APPROVED BY COMMANDER (Field Grade Officer Required for Deaths/DUSTWUN/Missing) <u>CPT Jerry Doe</u>		DATE (YYYYMMDD) <u>20151031</u>		DATE (YYYYMMDD) <u>20151031</u>	
DA FORM 1156, JUN 2015				APD LC v1.01	

Figure 6-4b. DA Form 1156, Casualty Feeder Card (back)

6-65. A wounded crewman’s individual weapon becomes the responsibility of the tank commander, or senior remaining crewmen. Personal effects, weapons, and equipment are turned in to the company supply sergeant/*property noncommissioned officer* at the earliest opportunity. The crewman’s protective mask stays with the crewman at all times. All sensitive items remain with the vehicle; these include maps, overlays, and SOPs.

KILLED IN ACTION

6-66. The platoon leadership designates a location for the collection of killed in action. All personal effects remain with the body. However, leaders remove and safeguard equipment and issue items. They keep these until they can turn the equipment and issue items over to the platoon sergeant. The platoon sergeant turns over the killed in action to the 1SG/*tank leader*. As a rule, units should not transport killed in action remains on the same vehicle as wounded Service members. Killed in action normally are transported to the rear on empty resupply trucks, but this depends on unit SOP.

Chapter 7

Tactical Enabling Tasks and Activities

Tactical enabling tasks are specialized missions that the tank platoon plans and conducts as part of the offense, defense, or during operations focused on stability tasks. The fluid nature of the modern battlefield increases the frequency with which the tank platoon conducts these enabling tasks. This chapter describes additional tasks the tank platoon may conduct to complement or support its primary tasks. The platoon executes these additional tasks separately or as part of a larger force.

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SECTION I – TROOP MOVEMENT

7-1. Movement places troops and equipment at their destination at the proper time, ready for combat, and ends when ground contact is made or the unit reaches its destination. Chapter 3 discusses the tactical formations and movement techniques. Movement is not maneuver. The difference is that maneuver happens once a unit has

made contact with the enemy and combines movement with direct fires to gain a position of advantage over the enemy.

TROOP MOVEMENT

7-2. Troop movement is the movement of troops from one place to another by any available means. The ability to posture the force for a decisive or shaping operation depends on the capability to conduct rapid and orderly movement to concentrate the effects of combat power at decisive points and times. The three types of troop movement are administrative movement, tactical road march, and approach march. The tactical road march and approach march are used when enemy contact is possible or anticipated.

ADMINISTRATIVE MOVEMENT

7-3. **Administrative movement** is a movement in which troops and vehicles are arranged to expedite their movement and conserve time and energy when no enemy ground interference is anticipated (FM 3-90-2). Administrative movements are only conducted in secure areas. They include rail and highway movement within the continental United States. Once deployed into theater of operation, administrative movements are normally not conducted.

TACTICAL ROAD MARCHES

7-4. A **tactical road march** is a rapid movement used to relocate units within area of operations to prepare for combat operations (ADP 3-90). Tank platoons conduct tactical road marches to move long distances and position themselves for future operations. Tactical road marches are conducted using fixed speeds and timed intervals. Road marches are planned at the battalion and company levels and executed by platoons.

7-5. Units maintain security against enemy air attack and UAS, and prepare to take immediate action against an enemy ambush, though they do not expect contact with significant enemy ground forces. Tank platoons should consider executing tactical road marches during limited visibility.

Organization For A Tactical Road March

7-6. The organization for a tactical road march is the march column, which includes all elements using the same route for a single movement under control of a single commander. The four elements of a march column include reconnaissance, quartering/advance party, main body, and trail party.

7-7. A march column provides excellent speed, control, and flexibility, but sacrifices flank security. It provides the ability to deploy forces to the front of the column. A march column is utilized when speed is essential and enemy contact is unlikely. However, functional and multifunctional support elements, such as air defense and engineers, are spaced throughout the column to protect and support the movement (refer to FM 3-90-2 for more information.)

Graphic Control Measures

7-8. The commander directing the tactical road march often uses a strip map or overlay. The tank platoon leader/*platoon commander* should also use an overlay to control the platoon during the conduct of the tactical road march. At a minimum, it must show the start point (SP), release point (RP), and route (see figure 7-1).

7-9. The SP location represents the beginning of the road march route. It should be located on easily recognizable terrain, far enough away from the unit's initial position to allow the platoon to organize into the march formation at the appropriate speed and interval. If time is available, the platoon leader/*platoon commander* should determine the time to reach the SP. This ensures the platoon arrives at the SP at the time designated in the commander's OPORD. The RP location is at the end of the route of march. It also is located on easily recognizable terrain. Elements do not halt at the RP, but continue to their respective positions with assistance from guides, waypoints, or graphic control measures. The route is the path of travel connecting the SP and RP. Checkpoints may also be used along the route to help in controlling movement and complying with the established timetable.

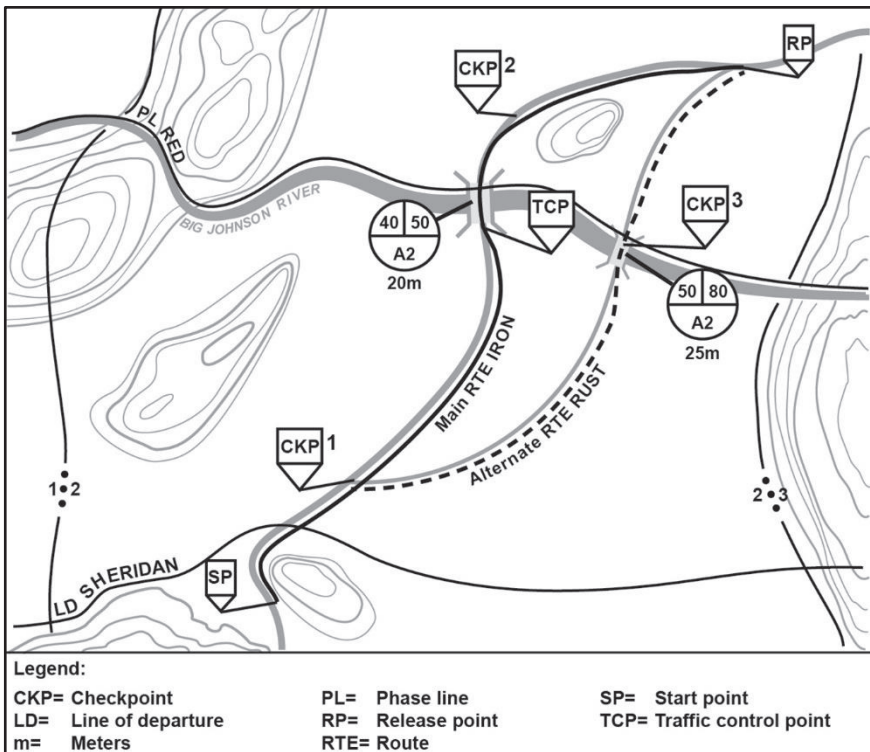


Figure 7-1. Overlay with route control measures

7-10. Digital overlays may serve as a source of graphic control measures, though the traditional hard-copy map and overlay must be maintained as a backup. Digital overlays

display waypoints and information concerning unit locations along the route of march that can help tank commanders in navigation and help them in maintaining situational understanding.

7-11. A strip map can be used to help in navigation (see figure 7-2). It must include the SP, RP, and checkpoints, and must list the distances between these points. Detailed blow-up sketches should be used for scheduled halt locations and other places where confusion is likely to occur. Strip maps are included as an annex to the movement order; if possible, a copy should be provided to all tank commanders.

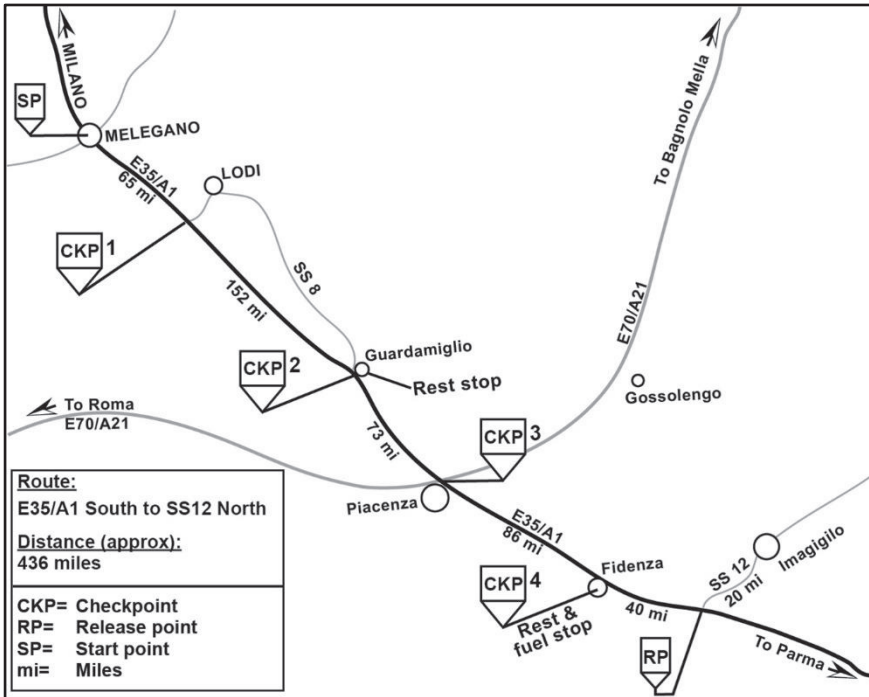


Figure 7-2. Strip map

7-12. Other graphic control measures include AAs and PLs. The key terms for a tactical road march are defined:

- SP is a location on a route where the marching elements fall under the control of a designated march commander.
- RP is a location on a route where marching elements are released from centralized control.
- Checkpoint is a point designated along the route to help marching units in complying with the timetable.
- Critical point is a point that identifies where interference with movement might occur.

- Light line is a designated PL, forward of which vehicles are required to use blackout lights during limited visibility.
- Traffic control points are positioned along the route to prevent congestion and confusion. They may be manned by military police or unit personnel. These personnel report to the appropriate area movement control organization when each convoy, march column, and march serial arrives at and completes passage of their location.
- Movement corridor is a designated area established to protect and enable ground movement along a route. Units establish a movement corridor to set the conditions to protect and enable movement of traffic along a designated surface route.

Tactical March Techniques

7-13. Tactical road marches are employed using three tactical march techniques: open column, close column, and infiltration. Each of these techniques uses scheduled halts to control and sustain the road march. METT-TC requires adjustments in the standard distances between vehicles.

7-14. During movement, elements in a column may encounter many different types of routes and obstacles simultaneously. Consequently, parts of the column may be moving at different speeds, which can produce an undesirable accordion-like effect. The movement order establishes the order of march, rate of march, interval or time gaps between units, column gap, and maximum catch-up speed.

7-15. March units report when they have crossed each control measure unless the commander directs them not to do so for security reasons. The platoon leader/*platoon commander* should communicate to the commander that they have “opened” a checkpoint when the first vehicle in the platoon crosses it, and should similarly “close” the checkpoint when the last vehicle crosses it. This will also be dependent on the commander’s guidance and unit SOP. Throughout the move, air and ground security are maintained.

Open Column

7-16. The open column is the most common tactical march technique because it offers the most security while still providing a reasonable degree of control. It is normally used during daylight marches, but may also be used at night with infrared lights, blackout lights, or passive night-vision equipment. Using an open column roughly doubles the column’s length and thereby doubles the time it takes to clear a point when compared to a close column moving at the same speed. Vehicle distance varies from 50 to 100 meters, but may be greater if required. In an open column, vehicle density varies from 15 to 20 vehicles per kilometer.

Close Column

7-17. The close column technique is normally employed for marches during hours of darkness under blackout driving conditions or for marches in restricted terrain. This

technique takes maximum advantage of the traffic capacity of a route, but provides little dispersion. Distance between vehicles varies from 20 to 25 meters. At night, vehicles are spaced so each driver can see the two lights in the blackout marker of the vehicle ahead. Normally, vehicle density is from 40 to 50 vehicles per kilometer along the route.

Infiltration

7-18. Infiltration provides the best possible passive defense against enemy observation and attack. It is used when time and road space are available and when security, deception, and dispersion are necessary. During infiltration, vehicles are dispatched in small groups, or at irregular intervals, at a rate that keeps the traffic density low and prevents undue massing of vehicles during the movement.

7-19. The disadvantages of an infiltration are that more time is required to complete the move, column control is nearly impossible, and recovery of broken-down vehicles by the trail party is more protracted when compared to vehicle recovery in open and close columns. Additionally, unit integrity is not restored until the last vehicle arrives at the destination, complicating the unit's onward deployment.

Note. Infiltration during troop movement should not be confused with infiltration as a form of maneuver as discussed in chapter 3 of this publication.

APPROACH MARCH

7-20. An **approach march** is the advance of a combat unit when direct contact with the enemy is intended. (ADP 3-90). However, it emphasizes speed over tactical deployment. The approach march is employed when the enemy's approximate location is known, since it allows the force to move with greater speed and less physical security or dispersion. In an approach march, units are task-organized to allow them to transition to an on-order or a be-prepared mission without making major organizational adjustments. The approach march terminates in a march objective, such as an attack position, AA, or assault position, or it can be used to transition to an attack.

7-21. The key to movement involves selecting the best combination of combat formation and movement technique for each situation (described in chapter 3). Leaders consider METT-TC in selecting the best route, appropriate formation, and movement technique. The leader's selection must allow the moving unit to—

- Maintain cohesion.
- Maintain communication.
- Maintain momentum.

- Provide maximum security.
- Make enemy contact in a manner allowing them to transition smoothly to offensive or defensive action.

ACTIONS DURING THE MARCH

7-22. The platoon must arrive at the SP at the time designated in the company OPORD. Some commanders designate a staging or marshaling area that enables platoons to organize their march columns and conduct final inspections and briefings before movement. Other units require platoons to move directly to the column from their current positions. To avoid confusion during the initial move, the platoon leader/*platoon commander* and tank commanders conduct a reconnaissance of the route to the SP, issue clear movement instructions, and conduct thorough rehearsals, while paying particular attention to signals and timing.

7-23. The platoon moves through the RP without stopping. The platoon leader/*platoon commander* picks up the assigned guide or follows the guide's signals to the AA. Depending on terrain and the equipment available (GPS or POSNAV), guides, and marking materials may be posted at or near exact vehicle locations.

MARCH SPEED

7-24. An element's speed in a march column changes as it encounters variable routes and road conditions, which can produce an undesirable accordion-like effect. The movement order establishes the speed of movement and maximum catch-up speed. During the march, the platoon's lead tank must not exceed the fixed march speed. Additionally, the lead tank should accelerate slowly out of turns or choke points to allow the platoon to gradually resume the speed of march after moving past the restriction.

ORIENTATION

7-25. Each tank in the platoon has an assigned sector of fire. The tank commanders assign sectors of observation to crewmen, both to cover their portion of the platoon sector and to achieve 360-degree observation, including air guards.

HALTS

7-26. While taking part in a road march, the platoon must be prepared to conduct scheduled and unscheduled halts.

Scheduled Halts

7-27. These are executed to conduct maintenance, refueling, personal relief activities, and to allow other traffic to pass. The time and duration of halts are established in the movement order; unit SOP specifies actions taken during halts. The first priority at a halt is to establish and maintain local security. A maintenance halt of 15 minutes is usually taken after the first hour of the march, with a 10-minute break every two hours thereafter.

7-28. During long marches, the unit may conduct a ROM operation. Depending on the tactical situation and the company OPORD, the platoon may conduct ROM for all vehicles simultaneously or by section. The OPORD specifies how much fuel or how much time at the pump for each vehicle. It also gives instructions for security at the ROM site and at the post-fueling staging area (see chapter 6 for more information).

7-29. Short halts are generally scheduled every two to three hours of movement and may last up to an hour; long halts occur on marches that exceed 24 hours and last no more than two hours. Long halts are not scheduled at night, which maximizes time of night movement.

Unscheduled Halts

7-30. Unscheduled halts are conducted under a variety of circumstances, such as when the platoon encounters obstacles or contaminated areas, or if a disabled vehicle blocks the route. The platoon conducts actions on contact and establishes 360-degree security.

7-31. A disabled vehicle must not be allowed to obstruct traffic. The crew moves the vehicle off the road immediately (if possible), reports its status, establishes security, and posts guides to direct traffic. If possible, the crew repairs the vehicle and rejoins the rear of the column. Vehicles that drop out of the column should return to their original positions only when the column has halted. Until then, they move at the rear, just ahead of the trail element, which is usually comprised of the maintenance team with the M88 recovery vehicle and some type of security. If the crew cannot repair the vehicle, then it is recovered by the maintenance element.

SECTION II – ROUTE SELECTION AND NAVIGATION

7-32. During planning and preparation for tactical movement, leaders analyze the terrain from two perspectives. First, they analyze the terrain to see how it can provide tactical advantage to friendly and enemy forces. Second, they look at the terrain to determine how it can aid in navigation. Leaders identify areas or terrain features dominating their avenue of approach. These areas can become possible intermediate and final objectives.

7-33. Leaders identify terrain along the route that facilitates navigation and the destruction of enemy forces if contact occurs. If the leaders want to avoid contact, they should choose terrain that hides the unit; if contact is desired, the leader should select terrain from which it is easy to scan and observe the enemy. Regardless of whether the terrain for mission requires stealth or speed, the leader must ensure most of the terrain along the route provides some tactical advantage.

7-34. Route selection and navigation are made easier with the aid of technology. The latest mission command/*command and control* systems enhance the tank platoon's ability to ensure they are in the right place at the right time, and to determine the location of adjacent units. Leaders and crews should be proficient in land navigation.

7-35. There is also a mobility advantage in mounted land navigation. A crew that becomes disoriented can move to a known point to reorient themselves more quickly

than if they were dismounted. A disadvantage of mounted movement, however, is vehicle capability, which the leader must consider during route planning. Most military vehicles are limited in the degree of slope they can climb and the type of terrain they can negotiate. Swamps, thickly wooded areas, or deep streams may present no problems to dismounted Soldiers, but may completely stop a tank or lead to throwing track.

NAVIGATION AIDS

7-36. There are two categories of navigational aids: linear and point. Linear navigational aids are terrain features such as trails, streams, ridgelines, wood lines, power lines, streets, and contour lines. Point terrain features include hilltops and prominent buildings. Navigational aids are usually assigned control measures to facilitate communication during the movement. Typically, linear features are labeled as PLs while point features are labeled as checkpoints (or rally points).

CATCHING FEATURES

7-37. Catching features are obvious terrain features which go beyond a waypoint or control measure and can be either linear or point. The general idea is if the unit moves past the objective, LOA, or checkpoint, then the catching feature alerts it that it has traveled too far. A catching feature can also be used as a navigational attack point.

NAVIGATIONAL ATTACK POINT

7-38. A navigational attack point is an obvious landmark near the objective, LOA, or checkpoint that can be found easily. Upon arriving at the navigational attack point, the unit transitions from rough navigation (terrain association or general azimuth navigation) to point navigation (dead reckoning). Navigational attack points are typically labeled as checkpoints.

HANDRAILS

7-39. Handrails are linear features parallel to the proposed route. Examples include roads, highways, railroads, power transmission lines, ridgelines, and streams. The general idea is to use the handrail to keep the unit oriented in the right direction. Guiding off of a handrail can increase the unit's speed while also acting as a catching feature.

ROUTE PLANNING

7-40. Route planning must consider enabling tasks specific to tactical movement. These tasks facilitate the overall operation. Tactical movement normally contains some or all of the following enabling tasks:

- Planning movement with GPS waypoints or checkpoints utilizing navigation skills.
- Movement to and passage of friendly lines.
- Movement to an objective rally point.
- Movement to a PL of deployment.

- Movement to a LOA.
- Linkup with another unit.
- Movement to a patrol base or AA.
- Movement back to and reentry of friendly lines.

7-41. Leaders first identify where they want to end up (the objective or LOA). Then, working back to their current location, they identify all of the critical information and actions required, as they relate to the route. For example, the leader considers navigational aids, tactical positions, known and templated enemy positions, and friendly control measures. Using this information, they break up the route into manageable parts called “legs.” Finally, they capture this information and draw a sketch on a route chart. There are three decisions leaders make during route planning:

- The type of (or combination of) navigation to use.
- The type of route during each leg.
- The SP and end point of each leg.

7-42. The leader assesses the terrain in the proposed AO. In addition to the standard military map, the leader may have aerial photographs and terrain analysis overlays from the parent unit, or the leader may talk with someone familiar with the area.

7-43. To control movement, a leader uses an axis of advance, directions of attack, PLs, a probable line of deployment, checkpoints (waypoints), a final coordination line, rally points, an AA, and routes.

DEVELOPING A LEG

7-44. Legs, or segments, in the planned route typically have only one distance and direction. A change in direction usually ends the leg and begins a new one. A leg must have a definite beginning and ending, marked with a control measure such as a checkpoint or PL (when using GPS, these are captured as waypoints). Whenever possible, the SP and end point should correspond to a navigational aid (catching feature or navigational attack point).

7-45. To develop a leg, the leader first determines the type of navigation and route best suited to the situation. Then the leader determines the distance and direction from the SP to the end point, and identifies critical METT-TC information as it relates to the specific leg. Finally, the leader captures this information and draws a sketch.

EXECUTE THE ROUTE

7-46. Using decisions about the route and navigation made during planning and preparation, leaders execute their route and direct their subordinates. In addition to executing the plan, leaders—

- Determine and maintain accurate location.
- Designate rally points.

DETERMINING LOCATION

7-47. The tank platoon leader/*platoon commander* must always know the platoon's location during movement. Without an accurate location, the platoon cannot expect to receive support, deconflict with adjacent units, integrate reserve forces, or accomplish their mission. There is also increased risk of fratricide. There are multiple techniques that leaders can use to ensure an accurate location:

- Executing common skills.
- Compass and odometer method (also called stabilized turret alignment navigation).
- GPS or the POSNAV system (on digitally-equipped tanks).

COMMON SKILLS

7-48. All crewmembers, particularly leaders, must be experts in mounted and dismounted land navigation. Important navigation tasks common to all include:

- Locating a point using grid coordinates.
- Using a compass (day/night).
- Determining location using resection, intersection, or modified resection.
- Interpreting terrain features.
- Measuring distance and elevation.
- Employing digital mission command/*command and control* systems.

MOUNTED LAND NAVIGATION

7-49. The principles of land navigation while mounted are basically the same as while dismounted. The major difference is the speed of travel. To be effective at mounted land navigation, the travel speed must be considered. When preparing to move, the effects of terrain on navigating mounted vehicles must be determined. You will cover great distances very quickly, and you must develop the ability to estimate the distance you have traveled.

COMPASS NAVIGATION

7-50. This method entails the use of a dismounted compass. The leader should divide the route into legs (segments) and then determine the magnetic azimuth (direction) and distance of each leg. Developing a chart to track these legs with their corresponding azimuths and distances is highly recommended to help prevent navigational errors. For each leg, the tank commander can dismount a crewmember with a lensatic compass. The crewmember should stand at least 18 meters away from the tank.

ODOMETER NAVIGATION

7-51. Using the vehicle odometer can help in monitoring distance traveled (similar to pace count when operating dismounted). However, this can be misleading on a map due to turns, elevation, obstacles, and restrictive terrain. A recommended technique is to

measure the map distance of travel and add 20 percent to convert to ground distance when operating cross-country.

STABILIZED TURRET ALIGNMENT NAVIGATION

7-52. Another method is to align the turret on the azimuth you wish to travel, then switch on the turret stabilization on. The gunner then orients on the direction of travel, provided by the dismounted navigator, and maintains turret stabilization (continues to hold the gun in place at that azimuth). Once oriented, the driver will move the tank onto the correct azimuth so that the main gun is centered over the driver's hatch, and the crewmember with the compass can then remount the tank.

7-53. The gunner must maintain stabilization at all times and will not traverse the turret during movement, but will remain focused on azimuth. If the driver begins to steer to the right or left, the tank commander can quickly reorient based on the direction of the turret, which will still be on the correct azimuth. The gun tube remains pointed at your destination no matter which way you turn the vehicle. This technique has been proven; it works. It is not harmful to the stabilization system. This method is subject to stabilization drift, so it is recommended to use it for no more than 5000 meters before resetting (see TC 3-25.26, chapter 11 for more details).

Note. This method does not allow the gunner to scan for targets during movement. It is recommended that the tank commander utilize the CITV on digitally equipped tanks, and that the other crewmembers remain vigilant with crew binoculars or other thermal devices if enemy contact is possible. Wingman tanks can also be used to provide added security. If the turret has to be taken off-line to engage a target, this entire process must be done again.

GLOBAL POSITIONING SYSTEMS

7-54. Digitally equipped tanks include the POSNAV, which automatically updates the tank's location through a built-in GPS. A GPS receives signals from satellites or land-based transmitters. It calculates and displays the position of the user in military grid coordinates and in degrees of latitude and longitude. During planning, leaders can enter their waypoints into the POSNAV or a handheld GPS. Once entered, the GPS can display information such as distance and direction from waypoint to waypoint. During execution, leaders use the GPS to establish their exact location.

Note. The best use of GPS or digital displays is for confirming the unit's location during movement. Terrain association and map reading skills still are necessary, especially for point navigation. Leaders must remember GPS can be jammed. Over reliance of GPS and digital displays can cause leaders to ignore the effects of terrain, travel faster than conditions allow, miss opportunities, or fail to modify routes when necessary.

TYPES OF NAVIGATION

7-55. There are three types of navigation: terrain association, general azimuth method, and point navigation. Leaders use whichever type or combination best suits the situation.

TERRAIN ASSOCIATION

7-56. Terrain association is the ability to identify terrain features on the ground by the contour intervals depicted on the map. The leader analyzes the terrain using the factors of OAKOC/KOCSA, and identifies major terrain features, contour changes, and manmade structures along the axis of advance. As the unit moves, the leader uses these features to orient with map locations. Terrain checkpoints are easily recognizable in daylight, in all weather conditions, and at the speed of movement. This method is similar to an automobile driver using street signs, stores, and parks to navigate (see TC 3-25.26). This method should end with a catching feature or navigational attack point, which transitions into point navigation.

7-57. The major advantages of terrain association are that it forces the leader to continually assess the terrain, which leads to identifying tactically-advantageous terrain, and that it is generally faster and more forgiving than point navigation. The disadvantage is that terrain association skills are harder to teach, learn, and retain.

GENERAL AZIMUTH METHOD

7-58. For this method, the leader selects linear terrain features; then while maintaining map orientation and a general azimuth, guides on the terrain feature. An advantage of the general azimuth method is that it speeds movement, avoids fatigue, and often simplifies navigation because the unit follows the terrain feature. The disadvantage is that it usually puts the unit on a natural line of drift. This method should end like terrain association, with the unit reaching a catching feature or a navigational attack point, then switching to point navigation.

POINT NAVIGATION

7-59. Point navigation, also called dead reckoning, is done by starting from a known point and strictly following a predetermined azimuth and distance. This form of navigation requires a high level of leader control because even a slight deviation over the course of a movement can cause navigation errors. This method uses the dismounted compass and a vehicle's odometer to follow a prescribed.

7-60. When navigating with steering marks, the navigator also identifies a terrain feature (hilltop, building, road intersection). The driver orients on this terrain feature and moves in as straight a line as possible. Point navigation without steering marks is used in flat terrain without features on which to orient. The compass and odometer method is a variant of dead reckoning without steering marks.

Note. Do not take compass reading from inside vehicles. Move away from vehicles when using lensatic compass.

7-61. When performed correctly, point navigation is very reliable, but time consuming. It is best used when the need for navigational accuracy outweighs the importance of using terrain. Point navigation is particularly useful when recognizable terrain features do not exist or are too far away to be helpful. Using point navigation early on in a long movement can stress the compass person, so it may be advisable to switch them out. One of the problems with point navigation is negotiating severely restrictive terrain or danger areas.

COMBINATION

7-62. Leaders can benefit from combining the three types of navigation. Terrain association and general azimuth method enable leaders to set a rough compass bearing and move as quickly as the situation allows toward a catching feature or a navigational attack point. Once reached, leaders switch to point navigation by paying close attention to detail, taking as much time as necessary to analyze the situation and find their point. Terrain association and general azimuth method allow for some flexibility in the movement, and do not require the same level of control as point navigation. Point navigation, on the other hand, enables leaders to precisely locate their objective or point.

TERRAIN/GRID INDEX REFERENCE SYSTEM

7-63. Many units routinely use the terrain index reference system or the grid reference system as navigation aids. Terrain index reference system identifies locations base on terrain point previously designated on an overlay; Grid reference system uses intersections of four grid squares as the known points.

7-64. Referencing a location from a known point is done in kilometers. For example, 500 meters is given as POINT FIVE, 1,000 meters as ONE, and 3,500 meters as THREE POINT FIVE. Cardinal directions are used. Shifts to the east or west are given first, followed by shifts to the north or south. Figure 7-3 illustrates this example.

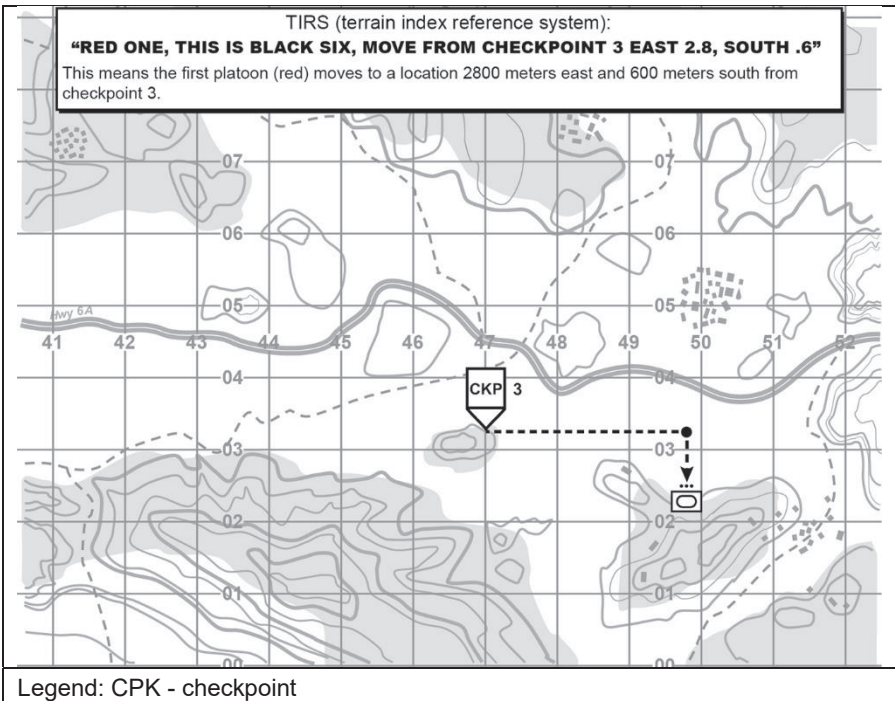


Figure 7-3. Terrain index reference system example

SECTION III – RECONNAISSANCE

7-65. Reconnaissance is a mission to obtain, by visual observation or other detection methods, information about the activities and resources of an enemy or adversary, or to secure data concerning the meteorological, hydrographical, or geographical characteristics of a particular area (refer to FM 3-98 for more information.) Reconnaissance primarily relies on the human dynamic rather than technical means.

7-66. Reconnaissance identifies terrain characteristics, enemy and friendly obstacles to movement, and the disposition of enemy forces and civilian population so the platoon leader/*platoon commander* can maneuver the forces freely and rapidly. Reconnaissance before unit movements and occupation of AAs is critical to protecting the force and preserving combat power. It also keeps the force free from contact as long as possible so that it can concentrate on its decisive operation.

7-67. Reconnaissance available to the tank platoon may include (but is not limited to) map and photographic reconnaissance, mounted and dismounted ground reconnaissance, and reconnaissance by fire. The tank platoon may perform mounted reconnaissance or provide support for mounted or dismounted reconnaissance. Whether the tank platoon is conducting reconnaissance as part of TLP or receiving information

through intelligence channels, reconnaissance is important during all phases of the operations process: planning, preparation, execution, and assessment.

RECONNAISSANCE METHODS

7-68. There are four methods of reconnaissance; mounted, reconnaissance by fire, dismounted, and aerial (manned and unmanned). While the tank platoon is equipped to conduct mounted and reconnaissance by fire, it is capable of executing dismounted reconnaissance (refer to FM 3-98 for more information).

MOUNTED RECONNAISSANCE

7-69. Mounted reconnaissance enables a more rapid tempo while increasing the potential compromise of reconnaissance efforts. Mounted reconnaissance should take advantage of standoff capabilities provided by surveillance and weapon systems to observe and engage from greater distances. Leaders consider mounted reconnaissance when—

- Time is limited.
- Distances require mounted movement.
- Stealth and security are not primary concerns.
- Detailed information is not required, or the mounted method affords the same level of detail as the dismounted method.
- The nature of the reconnaissance objective allows vehicles to approach (such as a terrain feature or road intersection in stability tasks).
- Enemy location is known.

RECONNAISSANCE BY FIRE

7-70. Reconnaissance by fire is a technique in which a unit fires on a suspected enemy position to cause the enemy forces to disclose their presence by movement or return fire (FM 3-90-2). The goal is to cause the enemy to react and give away their position or willingness to fight. The commander may direct the tank platoon to execute reconnaissance by fire when enemy contact is expected, or when contact has occurred, but the enemy situation is vague. This decision might be based on the original plan, or a recommendation from the platoon leader/*platoon commander*. The platoon then conducts tactical movement, occupying successive overwatch positions until it makes contact with the enemy or reaches the objective.

7-71. The platoon leader/*platoon commander* may designate TRPs at each overwatch position. The platoon leader/*platoon commander* then either requests indirect fires or employs direct fires on likely enemy locations to cause the enemy force to return direct fire or to compromise its positions during movement. The platoon leader/*platoon commander* directs individual tanks or sections to fire their .50 caliber or coax machine guns into targeted areas.

7-72. Individual tanks and sections not designated to reconnoiter by fire observe the effects of the firing tanks, and engage enemy forces as they are identified. The platoon

focuses reconnaissance by fire on the key terrain that dominates danger areas, on built-up areas that dominate the surrounding terrain, and on wooded areas not yet cleared.

DISMOUNTED RECONNAISSANCE

7-73. Dismounted reconnaissance is the most time-consuming method used by ground and air units, but permits the most detailed information collection about the enemy, terrain, civil considerations, and infrastructure. It is less likely that a tank platoon will conduct a lengthy dismounted reconnaissance mission, though the tank commander might utilize a crewmember (oftentimes the loader) to clear an intervisibility line, move into a listening post or OP, or ground guide the tank to advantageous positions or BPs. Leaders consider using dismounted reconnaissance when—

- Stealth is required or security is the primary concern.
- Time is available.
- Detailed information is required.
- The reconnaissance objective is a stationary threat, fixed site, or terrain feature.
- Vehicles cannot move through an area because of terrain or threat.
- Terrain creates a ‘visual dead space’ that prevents optics or sensors from being used.

AERIAL RECONNAISSANCE

7-74. Aerial reconnaissance conducted by manned or unmanned aviation assets serves as a link between sensors and mounted or dismounted reconnaissance. Complex terrain, adverse weather, enemy air defense systems, and deception or countermeasures degrade the effectiveness of aerial reconnaissance. Although the typical Armor company is not outfitted with a UAS platform, Armor companies and tank platoons can still benefit from aerial reconnaissance at higher echelons, as those assets send reports through battalion to the company. Leaders consider aerial reconnaissance when—

- Weather permits.
- Time is extremely limited or information is required quickly.
- Ground reconnaissance elements are not available.
- The objective is at an extended range.
- Verifying a target.
- Enemy locations are known and extremely dangerous (high risk) to ground assets or are vague but identified as high risk to ground assets.
- Terrain is complex and weather conditions are favorable.

FORMS OF RECONNAISSANCE

7-75. The five forms of reconnaissance are zone, area, route, reconnaissance in force, and special reconnaissance:

- Zone reconnaissance involves a directed effort to obtain detailed information on all routes, obstacles, terrain, and enemy forces in a zone defined by boundaries.
- Area reconnaissance focuses on obtaining detailed information about the terrain or enemy activity in a prescribed area.
- Route reconnaissance involves a directed effort to obtain detailed information of a specified route and all terrain from which the enemy could influence movement along that route. The route may be a road, highway, trail, mobility corridor, avenue of approach, or axis of advance.
- **Reconnaissance in force** is a deliberate combat operation designed to discover or test the enemy's strength, dispositions, and reactions or to obtain other information (ADP 3-90).
- Special reconnaissance is conducted as a special operation in hostile, denied, or politically sensitive environments to collect or verify information of strategic or operational significance. Special reconnaissance is not normally conducted by conventional forces.

SECTION IV – SECURITY

7-76. Security operations are undertaken by a platoon leader/*platoon commander* to provide early and accurate warning of enemy operations, and to provide the force being protected with time and maneuver space to react to the enemy (refer to FM 3-98 for more information).

FORMS OF SECURITY

7-77. The five forms of security operations are screen, guard, cover, area security, and local security.

SCREEN

7-78. **Screen** is a security task that primarily provides early warning to the protected force (ADP 3-90). Screen missions are defensive in nature, but must be executed aggressively, and can be conducted to protect a stationary or a moving force. Screens are largely accomplished by establishing OPs and patrols (mounted, dismounted, and aerial) oriented on an AO, and are often augmented with sensors. Based on the intent (engagement criteria) and unit capabilities, the screening force must disrupt enemy reconnaissance and impede, harass, or even destroy the enemy with fires (refer to FM 3-98 for more information).

GUARD

7-79. **Guard** is a security task to protect the main body by fighting to gain time while also observing and reporting information and preventing enemy ground observation of and direct fire against the main body. Units conducting a guard mission cannot operate independently because they rely upon fires and functional and multifunctional support assets of the main body (ADP 3-90). Battalion/squadron-sized elements or higher generally conduct guard missions; the tank platoon may participate in a guard mission though. Types of guard missions include advance guard, flank guard, and rear guard.

7-80. The guard differs from a screen in that the guard force must contain sufficient combat power to defeat, cause withdrawal of, or fix threatening combat forces before they can engage the protected force. A guard is appropriate when contact is expected, there is an exposed flank or threat force to the rear, the protected force is conducting a retrograde operation, or there is a requirement for greater protection than a screen can provide.

COVER

7-81. **Cover** is a security task to protect the main body by fighting to gain time while also observing and reporting information and preventing enemy ground observation of and direct fire against the main body (ADP 3-90). Units performing the cover task can operate independently of the main body. A covering force accomplishes all the tasks of screening and guard forces, but operates apart from the main body to develop the situation early; it conducts operations to deceive, disorganize, and destroy enemy forces. The cover mission is typically conducted at the brigade-level, but the tank platoon may participate in a cover.

AREA SECURITY

7-82. **Area security** is a security task conducted to protect friendly forces, installation routes, and actions within a specific area (ADP 3-90).

LOCAL

7-83. **Local security** is a security task that includes low-level security activities conducted near a unit to prevent surprise by the enemy (ADP 3-90). Local security is an enduring priority of work for the tank platoon though, and it is inherent in all operations.

7-84. Local security can be conducted with active and passive measures. Active measures include, but are not limited to, OPs and patrols, establishing specific levels of alert in the unit (based on METT-TC), and establishing stand-to-times, dependent on the unit SOP. Passive measures include, but are not limited to, using camouflage, movement control, noise and light discipline, and proper communication procedures, per unit SOP, to avoid enemy detection or deceive the enemy about friendly positions or intentions.

OBSERVATION POSTS

7-85. An OP is a position from which military observations are made, or fire directed and adjusted, and which possesses appropriate communications. They help to protect the platoon when long-range observation from current positions is not possible; this can occur when the platoon is in a hide position or when close terrain offers concealed avenues of approach to the platoon's position. OPs can be either mounted or dismounted (refer to FM 3-90-2 for more information).

SELECTION OF THE OBSERVATION POST SITE

7-86. Before deploying an OP, the platoon leader/*platoon commander* analyzes the terrain in the AO and coordinates with adjacent platoons to discover ways to enhance their own AO and eliminate gaps in the AO between units. Next, the platoon leader/*platoon commander* decides on the type of OP (mounted or dismounted) necessary to observe the avenue of approach based on requirements for early warning and platoon security. The platoon leader/*platoon commander* must consider the platoon's reaction time based on the readiness. An OP should have the following characteristics:

- Clear observation of the AO. Ideally, the fields of observation of adjacent OPs or units overlap to ensure full coverage of the AO.
- Effective cover and concealment. Positions with natural cover and concealment help to reduce the OP's vulnerability to enemy observation and attack.
- Covered and concealed routes to and from the OP. Service members must be able to enter and leave their OPs without being seen by the enemy.
- A location that does not attract enemy attention. An OP should not be in a site that would logically be the target of enemy observation or indirect fire.
- A location that does not skyline observers. Avoid hilltops. Position the OP farther down the slope of the hill.
- A location that is within range of platoon small-arms fire. This enables the platoon to cover the OP if withdrawal becomes necessary.

MOUNTED OBSERVATION POSTS

7-87. Platoons use mounted OPs when it has access to hull-down or turret-down positions that afford unobstructed surveillance of mounted avenues of approach in the platoon's AO. They allow the platoon leader/*platoon commander* to take advantage of the vehicles' capabilities: magnified thermal and daylight optics, sophisticated communications, lethal weapon systems, and enhanced survivability.

7-88. The CITV on the M1A2/*remote thermal sight/Abrams integrated display and targeting system on the M1A1* is especially valuable in the mounted OP. The M1A2/*M1A1* can occupy a turret-down position and use the CITV to scan the designated AO without moving the turret. All other types of vehicles must occupy turret-down or hull-down positions that allow them to move their turrets when scanning the sector.

7-89. A common mounted OP technique is to position one vehicle to observe an EA or obstacle while the remainder of the platoon occupies hide positions. Even when the mounted OP has clear fields of observation, it is advisable to dismount one or two members of the crew to establish a listening post/OP to provide close-in local security for the vehicle. The listening post/OP should be far enough away from the tank that sounds from the vehicle do not prevent the dismounts from hearing an approaching enemy. Another method of enhancing local security is to coordinate with Infantry elements. The Infantry can conduct patrols and occupy dismounted OPs per the company commander's security plan.

DISMOUNTED OBSERVATION POSTS

7-90. Dismounted OPs provide local security along dismounted avenues of approach whenever the platoon must halt and occupy vehicle positions from which the terrain impedes observation or early warning of enemy activities. During urban operations, the tank commanders need to place OPs to protect blind spots. Use of supporting Infantry is the best answer, but loaders may need to fill this mission if Infantry is not available. The tank platoon uses the following steps to occupy, staff, and improve a dismounted OP:

- The platoon leader/*platoon commander* or platoon sergeant determines the need for the OP and identifies the location based on the physical characteristics outlined previously in paragraph 7-86 in this section.
- The platoon leader/*platoon commander* or platoon sergeant assembles OP personnel at the vehicle.
- The OP personnel are designated in the unit SOP, but are normally the loaders from wingman tanks. In two-man OPs, one crewman observes the sector while the other provides local security. Some short-duration OPs may consist of one crewman providing local security for individual vehicles in close terrain.
- The platoon leader/*platoon commander* or platoon sergeant briefs the OP personnel to ensure that they are trained in reporting procedures and individual camouflage techniques and that they have the proper equipment as designated in the unit SOP. Equipment normally includes the following:
 - Individual weapons: M4 rifle, M9 pistol, and grenades.
 - Communications equipment (such as wire, flag set, flashlight, or radio).
 - Flag use is based on unit SOP and availability, but a general rule of thumb is green flag for friendly elements, yellow flag for unknown elements, and red flag for enemy elements.
 - Seasonal uniform with the modular lightweight load-carrying equipment fighting load carrier and appropriate MOPP gear.
 - Binoculars, night observation devices, and dismounted thermal devices.
 - Paper and pen or pencil for making a sector sketch.
 - Map with overlay, protractor, and compass.
 - Local security measures such as trip flares and claymore mines.

Note. The use of nonsecure radios, including handheld types, is not recommended. If used, however, platoons must exercise extreme caution.

7-91. The platoon leader/*platoon commander* or platoon sergeant leads OP personnel to the OP site and briefs them on the following information:

- The mission: ensures OP personnel understand that their mission is to see and report and not become engaged with the enemy dismounts.
- When and how to report.
- When and how to withdraw. The withdrawal criteria should be specific; examples include withdrawal when a CBRN attack is detected, when an enemy tank section crosses a PL, or when enemy dismounted infantrymen approach to within 300 meters of the OP.
- Challenge and password.
- When they are replaced. As a general rule, OP personnel should be replaced every two hours. The platoon sergeant and platoon leaders/*platoon commanders* are responsible for establishing these rotations and manning of OPs. During cold weather, this rotation may be done more frequently.
- OP personnel must execute a plan for night vision operations. Rotating between personnel, with one not scanning for longer than 20 minutes, allows them to keep their night vision and to maintain good scanning techniques.

7-92. Once in place, OP personnel take the following steps to improve their position:

- Establish communications.
- Camouflage the position and routes into and out of it.
- Prepare a range card based on the platoon fire plan (refer to appendix A).
- Dig in to provide protection from indirect and direct fires.

COMBAT OUTPOST

7-93. A **combat outpost** is a reinforced observation post capable of conducting limited combat operations (FM 3-90-2). Using combat outposts is a technique for employing security forces in restrictive terrain. They are also used when smaller OPs are in danger of being overrun by enemy forces infiltrating into and through the security area. The platoon leader/*platoon commander* uses a combat outpost when an extended depth of the security area is wanted, when the platoon leader/*platoon commander* wants the forward OPs to remain in place until they can observe the enemy's main body, or when the platoon leader/*platoon commander* anticipates that the forward OPs will likely become encircled by enemy forces.

7-94. While METT-TC determines the size, location, and number of combat outposts established by a unit, a reinforced platoon typically occupies a combat outpost. Therefore, a platoon can be part of a larger unit's combat outpost. A combat outpost must have sufficient resources to accomplish its designated missions, but not so much as to seriously deplete the strength of the main body. It is usually located far enough in

front of the protected force to preclude enemy ground reconnaissance elements from observing the actions of the protected force.

SECTION V – ASSEMBLY AREA

7-95. An **assembly area** is an area a unit occupies to prepare for an operation (FM 3-90-1). A well-planned AA has the following characteristics:

- Concealment from enemy ground and air observation.
- Cover from direct fire.
- Space for dispersion; separate each AA by enough distance from other AAs to preclude mutual interference.
- Adequate entrances, exits, and internal routes.
- Good drainage and a surface that can sustain the movement of the unit's vehicles and individuals.
- Terrain masking of electromagnetic signatures.
- Terrain allowing observation of ground and air avenues into the AA.
- Sanctuary from enemy medium-range artillery fires because of its location outside the enemy's range.

7-96. Normally, the platoon occupies an AA as part of a larger unit such as a company. The company commander assigns a sector of responsibility and weapons orientations for each platoon. If the platoon occupies an AA alone, it establishes a perimeter defense. The proper location of an AA contributes to security and flexibility, and should facilitate future operations. Infantry units can generally place AAs closer to the enemy without excessive risk of detection because they have a smaller signature than Armor units; however, the increased mobility of armor allows for AAs to be further from the LD. See figure 7-4 for an example of a company team AA.

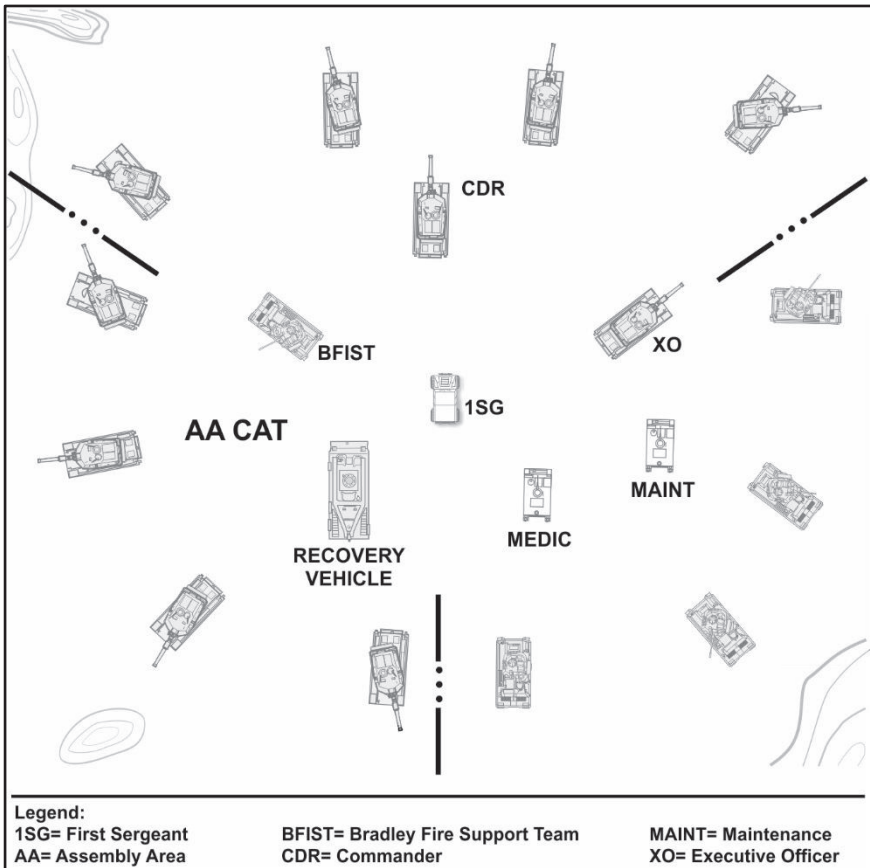


Figure 7-4. Company team assembly area

QUARTERING PARTY

7-97. A **quartering party** is a group of unit representatives dispatched to a probable new site of operations in advance of the main body to secure, reconnoiter, and organize an area before the main body's arrival and occupation (FM 3-90-2). Normally, a quartering party helps the platoon in the occupation of an AA. The exact composition of the quartering party is established by company SOP, but it may consist of one or two crewmembers from each platoon or even one tank per platoon with the prescribed equipment and uniform. It is generally led by the company XO, or 1SG/*tank leader*, or by a senior noncommissioned officer, and should be a small enough element to move quickly while still maintaining a significant self-defense capability. The quartering party takes these actions in preparing the AA:

- Reconnoiter for enemy forces, CBRN contamination.
- Evaluate the condition of the route to the AA, and suitability of the area (covering such factors as drainage, space, and internal routes).
- Organize the area based on the commander's guidance. This includes designating and marking tentative locations for the platoon, trains, and command post vehicles.
- Improve and mark entrances, exits, and internal routes.
- Mark or remove obstacles (within the party's capabilities).
- Mark tentative vehicle locations.

Note. In some cases, a company may occupy an AA without first sending out a quartering party. During this "occupation by force," the platoon leader/*platoon commander* orders a hasty occupation of a BP at the platoon's designated location (see chapter 4).

OCCUPATION PROCEDURES

7-98. Once the AA has been prepared, the quartering party awaits the arrival of the company, maintaining surveillance and providing security of the area within its capabilities. Quartering party members guide their elements (including the platoon) from the RP to their locations in the AA. Prearranged signals and markers (for day and night occupation) and SOPs should help the tank commanders in finding their positions. The key consideration is to move quickly into position to clear the route for follow-on units.

7-99. Once in position, the platoon conducts hasty occupation of a BP described in chapter 4. It establishes and maintains security and coordinates with adjacent units, allowing the platoon to defend from the AA as necessary. The platoon can then prepare for future operations by conducting TLP and the priorities of work in accordance the company OPORD. These priorities of work and preparations include—

- Establish and maintain security.
- Position vehicles.

- Emplace OPs.
- Emplace CBRN alarms.
- Establish lateral communications/flank coordination.
- Prepare range cards and fire plans.
- Establish wire communication (if directed by unit SOP).
- Camouflage vehicles.
- Select alternate, supplementary positions, and rally points.
- Develop an obstacle plan.
- Conduct TLP.
- Perform maintenance activities on vehicles, communications equipment, and weapon systems.
- Verify weapon system status; conduct bore sighting, muzzle reference system updates, test-firing, and other necessary preparations.
- Conduct resupply, refueling, and rearming operations.
- Conduct rehearsals and training for upcoming operations.
- Conduct PCCs and PCIs.
- Eat, rest, and conduct personal hygiene.
- Establish field sanitation.

7-100. Readiness conditions, (known as REDCON), allow changing situations and ensure completion of necessary work and rest plans. The commander uses the REDCON status as a standardized method to adjust the unit's readiness to move and fight. REDCON normally consist of the following four levels:

- REDCON level 1: Full alert; unit ready to move and fight. CBRN alarms and hot loop equipment are stowed, dismounted OPs have been pulled in, all personnel are mounted with weapons manned, engines started, and the tank platoon is ready to move immediately.
- REDCON level 2: Full alert; unit ready to fight. Equipment is stowed (except hot loop and CBRN alarms), PCCs are complete, personnel alert and mounted, dismounted OPs may remain in place (pending guidance from the commander), and the tank platoon is ready to move within 15 minutes of notification.
- REDCON level 3: Reduced alert. The tank platoon is in 50 percent security while the other 50 percent executes the work and rest plans, and the platoon is ready to move within 30 minutes of notification.
- REDCON level 4: Minimum alert. Dismounted OPs are manned, one Service member per platoon monitors the radio and provides security with turret weapons, maintaining frequency modulation and digital communications with the company and adjacent platoons. The tank platoon is ready to move within one hour of notification.

SECTION VI – LINKUP

7-101. A **linkup** is a meeting of friendly ground forces, which occurs in a variety of circumstances (ADP 3-90). It happens when an advancing force reaches an objective area previously seized by another unit; when an encircled element breaks out to rejoin friendly forces or a force comes to the relief of an encircled force; and when converging maneuver forces meet. Both forces may be moving toward each other, or one may be stationary. Whenever possible, joining forces exchange as much information as possible before starting a linkup operation. The HQ ordering the linkup establishes—

- A common operational picture.
- Command relationship and responsibilities of each force before, during, and after linkup.
- Coordination of direct and indirect fire support before, during, and after linkup, including control measures.
- Linkup method.
- Recognition signals and communication procedures to use, including pyrotechnics, vehicle markings, gun-tube orientation, panels, colored smoke, lights, and challenge and passwords.
- Operations to conduct following linkup.

CONTROL MEASURES

7-102. The leader who orders the linkup establishes control measures for units conducting the linkup—

- Assigns each unit an AO defined by left and right boundaries and a restrictive fire line (RFL) that also acts as a LOA.
- Establishes a no fire area for protection around one or both units.
- Establishes a coordinated fire line beyond the area where the unit's will conduct linkup, which allows available fires to quickly attack enemy targets approaching the area where the linkup is to occur.
- Establishes a no fires area to ensure uncleared air-delivered munitions or indirect fires do not cross the RFL or a boundary and impact friendly forces.
- Establishes linkup points to make physical contact with each other, and designates alternate linkup points, since enemy action may interfere with the primary linkup points.

Note. Control measures are adjusted during the operation to provide for freedom of action as well as positive control.

EXECUTION

7-103. There are two linkup methods. The preferred method is when the moving force has an assigned LOA near the other force and conducts the linkup at predetermined

contact points. Units then coordinate additional operations. The leader uses the other method during highly fluid mobile operations when the enemy force escapes from a potential encirclement, or when one of the linkup forces is at risk and requires immediate reinforcement. In this method, the moving force continues to move and conduct long-range recognition via radio or other measures, stopping only when it makes physical contact with the other force.

PHASES OF THE LINKUP

7-104. The tank platoon conducts linkup activities independently or as part of a larger force. Within a larger unit, the platoon may lead the linkup force. The linkup includes three phases. The following actions are critical to the execution of a linkup.

PHASE 1 – FAR RECOGNITION SIGNAL

7-105. During this phase, the forces conducting a linkup establish radio and digital communications before reaching direct fire range. The lead element of each linkup force should monitor the radio frequency of the other friendly force.

PHASE 2 – COORDINATION

7-106. Before initiating movement to the linkup point, the forces must coordinate necessary tactical information including the following:

- The known enemy situation.
- Mission command/*command and control* systems (for example, Joint Battle Command Platform), if equipped, filter setting and address book commonality.
- Type and number of friendly vehicles and number of vehicles equipped with Mission command/*command and control* systems.
- Disposition of stationary forces (if either unit is stationary).
- Routes to the linkup point and rally point, if any.
- Direct and indirect fire control measures.
- Near recognition signals.
- Communications information.
- Sustainment responsibilities and procedures.
- Finalized location of the linkup point and rally points, if any.
- Special coordination, such as those covering maneuver instructions or requests for medical support.

PHASE 3 – MOVEMENT TO THE LINKUP POINT AND LINKUP

7-107. All units or elements involved in the linkup enforce strict fire control measures to help prevent fratricide and friendly fire. Moving or converging forces must easily recognize linkup points and RFLs. Linkup elements take the following actions:

- Conduct far recognition using radios or mission command/*command and control* systems, if equipped.
- Conduct short-range (near) recognition using the designated signal.
- Complete movement to the linkup point.
- Establish local security at the linkup point.
- Conduct additional coordination and linkup activities, as necessary.

SECTION VII – RELIEF IN PLACE

7-108. A relief in place is an operation in which all or part of a unit is replaced in an area by the incoming unit along with the responsibilities and the AO. (Refer to FM 3-90-2 for more information.) It may be accomplished during any phase of an operation, but conducted preferably during periods of limited visibility.

7-109. The three techniques used to conduct a relief in place are sequential, simultaneous, or staggered:

- A sequential relief occurs when each element within the relieved unit is relieved in succession, from right to left or left to right, depending on how it is deployed.
- A simultaneous relief occurs when all elements are relieved at the same time.
- A staggered relief occurs when the commander relieves each element in a sequence determined by the tactical situation, not its geographical orientation.

7-110. A relief in place requires detailed planning, coordination, and reconnaissance before the operation is executed. Once execution begins, precise movement and effective communications are required. Simultaneous relief takes the least time to execute, but is more easily detected by the enemy. Sequential or staggered reliefs can occur over a significant amount of time. A relief can also be characterized as either hasty or deliberate, depending on the depth and detail of planning, and how much time to execute it. Maintaining security is critical throughout the entire operation.

PLANNING

7-111. Once ordered to conduct a relief in place, the leader of the relieving unit contacts the leader of the unit to be relieved. The co-location of unit command posts also helps achieve the level of coordination required. If the relieved unit's forward elements can defend the AO, the relieving unit executes the relief in place from the rear to the front. This facilitates movement and terrain management.

7-112. When planning for a relief in place, the platoon leader/*platoon commander* takes the following actions:

- Issues an order immediately.
- Sends a key leader with the advance party to conduct detailed reconnaissance and coordination with the unit being relieved.

- As the relieving unit, adopts the outgoing unit's normal pattern of activity as much as possible and determines when the platoon will assume responsibility for outgoing unit's position.
- As the relieving unit, co-locates with the relieved unit's HQ.
- Maximizes OPSEC to prevent the enemy from detecting the relief operation.
- Plans for relief of sustainment elements after combat elements are relieved.
- As the unit being relieved, the leader plans for transfer of excess ammunition, wire, petroleum, oil, lubricants, and other materiel of tactical value to the incoming unit.
- Controls movement by reconnoitering, designating and marking routes, and providing guides.

COORDINATION

7-113. The incoming and outgoing unit leaders meet to exchange tactical information, conduct a joint reconnaissance of the area, and complete other required coordination. The two leaders carefully address passage of command and jointly develop contingency actions to deal with enemy contact during the relief. Every effort is made to conceal the relief from the enemy for as long as possible. The process of coordination includes—

- Location of vehicle and individual fighting positions (including hide, alternate, and supplementary positions). Leaders should verify fighting positions by conventional map and using the latest mission command/*command and control* systems available.

Note. When a tank platoon is relieving an Infantry unit, leaders should allocate time to construct or expand individual vehicle fighting positions.

- The enemy situation.
- The outgoing unit's tactical plan, including graphics, company and platoon fire plans, and individual vehicles' AO sketches.
- Direct and indirect fire support coordination, including indirect fire plans and time of relief for supporting artillery and mortar units.
- Types of weapons systems being replaced.
- Time, sequence, and method of relief.
- Location and disposition of obstacles, and time when the leaders will transfer responsibility.
- Supplies and equipment to be transferred.
- Movement control, route priority, and placement of guides.
- Mission command/*command and control* information, including digital and frequency modulation communications information.

Note. Units conduct relief on the radio nets of the outgoing unit to facilitate control during the relief.

- Maintenance and logistical support for disabled vehicles.
- Visibility considerations.
- Both the outgoing and incoming leaders establish the time or event that triggers the passage of command (when responsibility for the AO transitions from the unit being relieved to the relieving unit).

CONDUCT THE RELIEF

7-114. When conducting the relief, the outgoing leader retains responsibility of the AO and mission, including operational control over all subordinate elements of the incoming unit, until the previously established time or event that triggers the passage of command. At that time, when all elements of the outgoing unit have been relieved and adequate communications are established, responsibility passes to the incoming leader. The conduct of the relief varies by technique (sequential, simultaneous, or staggered). Regardless of the method being used, the incoming unit generally moves to an AA to the rear of outgoing unit and, if the tactical situation permits, establishes a screen to the front of the outgoing unit's BPs.

7-115. A sequential relief is the most time consuming method because subordinate elements are relieved one at a time (for example, one platoon is relieved before another). A sequential relief follows this general sequence:

- The outgoing and incoming units co-locate their HQ and trains elements to facilitate mission command and transfer of equipment, ammunition, fuel, water, and medical supplies.
- The first element being relieved (for example, a tank platoon) moves to its alternate fighting positions or BP while the relieving element moves along designated routes into the outgoing unit's primary fighting positions. The incoming element occupies individual fighting positions as appropriate.
- Incoming and outgoing elements complete the transfer of equipment and supplies.
- The relieved element moves to the designated AA behind its position.
- Once each outgoing element clears the rally point en route to its AA, the next relieving element moves forward, and the sequence repeats.

7-116. A simultaneous relief is the fastest, but least secure, method because all outgoing elements are relieved at once. The relief follows this general sequence:

- Outgoing elements move to their alternate fighting positions or BP while the relieving element moves along designated routes into the outgoing unit's primary fighting positions.
- Incoming and outgoing elements complete the transfer of equipment and supplies.
- The relieved element moves to the designated AA behind its position.

7-117. A staggered relief is similar to a sequential relief in that each element is relieved in sequence. The difference is that in a sequential relief, the elements are relieved based on geographic orientation; in a staggered relief, units are relieved based on the tactical

situation (for example, units in contact with the enemy versus units not in contact). Similar to a sequential relief, a staggered relief in place is time consuming.

SECURITY AND COMMUNICATIONS

7-118. OPSEC is critical in preventing enemy reconnaissance and intelligence assets from identifying weaknesses and vulnerabilities that occur during the relief. Net discipline is the key to an effective and secure relief operation. Before beginning the relief, the incoming (relieving) unit changes to the outgoing unit's frequency, and the two units both operate on the same net throughout the relief. The incoming unit observes radio listening silence while the outgoing unit maintains normal radio traffic.

7-119. Leaders at all levels have the ability to contact other units involved in the relief to warn of emergency situations, such as enemy contact, by monitoring the same frequency and maintaining digital links. Because of the proximity of the relieved and relieving elements, however, leaders must remember that the net is crowded with many stations and digital links competing for limited availability of air time. If radio communications are lost, tank crews can use hand and arm signals or red, green, and yellow flags, if issued (refer to TC 3-21.60).

7-120. Once the relief is complete, there are two methods for returning to separate unit frequencies. The first is to have the incoming unit switch back to its original frequency; the second is for the outgoing unit to switch to an alternate frequency. This latter method offers several advantages.

7-121. The relieving unit establishes voice and digital communications, and is prepared to defend immediately upon the exit of the relieved unit.

7-122. The relieving unit never loses the digital link (if applicable) as it assumes the new mission. Once the relief is complete, the relieved unit simply logs off the digital net and switches to an alternate frequency modulation; it can then reestablish a digital link after leaving the relief site.

7-123. Maintaining radio traffic on the same frequency before, during, and after the operation helps deceive the enemy as to whether a relief has taken place.

SECTION VIII – PASSAGE OF LINES

7-124. In a passage of lines, a unit moves forward or rearward through another stationary unit's positions with the intent of moving into or out of contact with the enemy. Units usually conduct passage of lines when at least one METT-TC factor does not permit the bypass of a friendly unit. A passage of lines is a complex operation requiring close supervision and detailed planning, coordination, and synchronization between the leaders of the unit conducting the passage and unit being passed.

7-125. A passage may be designated as a forward or rearward passage of lines, and its primary purpose is to transfer responsibility for an area from one unit to another (called battle handover). A forward passage of lines occurs when a unit passes through another unit's positions while moving toward the enemy; a rearward passage of lines occurs

when a unit passes through another unit's positions while moving away from the enemy. The tank platoon participates in a passage of lines as part of a larger force. If it is part of the stationary force, it occupies defensive positions and helps the passing unit. If it is part of the passing unit, it executes tactical movement through the stationary unit.

PLANNING CONSIDERATIONS

7-126. The controlling company is responsible for planning and coordinating a passage of lines that involves the platoon. No special task organization is required for either the stationary force or the passage force. In some situations, such as the company using multiple passage routes (a separate route for each platoon), the platoon leader/*platoon commander* takes responsibility for planning and coordinating the operation. The passage of lines may be categorized as hasty or deliberate, depending on the tempo of the operation and on METT-TC.

7-127. Units are highly vulnerable during a passage of lines, as vehicles may be concentrated, fires might be masked, and the passing unit may not be able to effectively maneuver or react to contact. Detailed reconnaissance and coordination are crucial to ensure the passage is conducted quickly and smoothly. The commander normally conducts all necessary reconnaissance and coordination for the passage, but at times, might designate the XO, ISG/*tank leader*, or a platoon leader/*platoon commander* to conduct liaison duties for reconnaissance and coordination. Platoon leaders/*platoon commanders* must therefore be prepared to coordinate and plan for a passage of lines as either the stationary or passing force.

7-128. The following tactical factors and procedures are coordinated in a passage of lines (Table 7-1 on page 7-34 also describes the stationary unit and passing unit responsibilities):

- Passage lane. This is the lane through an enemy or friendly obstacle that provides safe passage for a passing force (FM 3-90-2).
- Passage point. This is a specifically designated place where the passing units pass through the stationary unit (FM 3-90-2).
- BHL. This is a designated PL on the ground where responsibility transitions from the stationary force to the moving (passing) force and vice versa (ADP 3-90).
- Unit designation and composition, including type and number of passing vehicles.
- Passing unit arrival time(s).
- Location of attack positions or AAs.
- Current enemy situation.
- Stationary unit's mission and plan (including OPs, patrols, and obstacle locations).
- Location of contact points, passage points, and passage lanes.
- Guide requirements.
- Order of march.

- Anticipated and possible actions on enemy contact.
- Supporting direct and indirect fires, including the location of the RFL.
- Any CBRN conditions.
- Available sustainment assets and locations (for example, casualty collection point or unit maintenance collection point).
- Communications information (including frequencies, digital/Force XXI Battle Command, brigade and below data, and near/far recognition signals).
- Any additional procedures for the passage.

Note. The use of GPS or POSNAV waypoints simplifies this process, and as a result, speeds the passage. The stationary unit is also generally responsible for establishing the necessary graphic control measures (passage points, lanes, and so forth) because it controls the terrain and is more familiar with the obstacle layout.

Table 7-1. Stationary and passing unit responsibilities

<i>STATIONARY UNIT</i>	<i>PASSING UNIT</i>
Clears lanes or reduces obstacles along routes.	May assist with reducing obstacles.
Provides obstacle and friendly units' locations.	Provides order of movement and scheme of maneuver.
Clears and maintains routes up to the battle handover line (BHL).	May assist with maintaining routes.
Provides traffic control for use of routes and lanes.	Augments the traffic control capability of the stationary unit as required.
Provides security for passage up to the BHL.	Maintains protection measures
Identifies locations for the passing unit to use as assembly area (AA) and attack positions.	Reconnoiters from its current location to its designated AA and attack positions.
Provides the passing unit previously coordinated or emergency logistics assistance within its capability.	Assumes full responsibility for its own sustainment support forward of the BHL.
Controls all fires in support of the passage.	Positions artillery to support the passage.

FORWARD PASSAGE OF LINES

7-129. In a forward passage, the passing unit first moves to an AA or an attack position behind the stationary unit. Designated liaison personnel (from the passing unit) move forward to linkup with guides and confirm coordination information with the stationary unit. Guides then lead the passing elements through the passage lane.

7-130. The stationary unit is responsible for security. It secures the AO far enough to its front that the passing force has maneuver space to reform into a combat formation before making enemy contact. The stationary force secures the passing force until the passing force masks the stationary unit's direct fires; at this point, forward security transitions to the passing force to prevent fratricide.

7-131. The passing force conducts a forward passage by employing tactical movement. It moves quickly, using appropriate dispersal and formations whenever possible, and keeping radio traffic to a minimum. It bypasses disabled vehicles as necessary, and holds its fire until it passes the BHL or the designated fire control measure, unless the leader has coordinated fire control with the stationary unit. Once clear of passage lane restrictions, the unit consolidates at a rally point or attack position, and conducts tactical movement according to its orders (see figure 7-5).

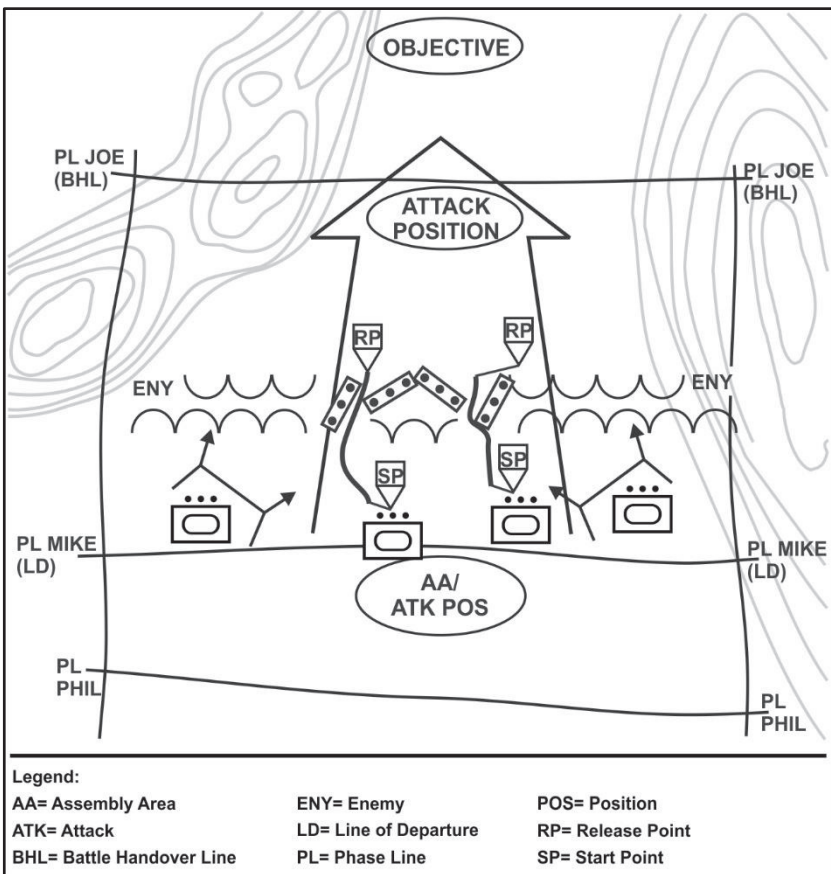


Figure 7-5. Forward passage of lines

REARWARD PASSAGE OF LINES

7-132. Coordination of recognition signals and direct fire restrictions are critical because of the increased risk of fratricide during a rearward passage. Rehearsals and training can help reduce fratricide. The passing unit contacts the stationary unit while it is still beyond direct fire range and conducts coordination, as discussed previously. Near recognition signals and location of the BHL are emphasized. Both passing and stationary units can employ additional fire control measures, such as RFLs, to minimize the risk of fratricide (see figure 7-6).

7-133. Following coordination, the passing unit continues tactical movement toward the passage lane. The passing unit is responsible for its security until it passes the BHL. If the stationary unit provides guides, the passing unit can conduct a short halt to linkup and coordinate with them. The passing unit moves quickly through the passage lane to a designated location behind the stationary unit.

Note. The concept of rearward and forward passage is similar, but a rearward passage of lines is generally more difficult to execute because the enemy (on the offense) likely has the initiative, the rearward passing unit is tired and possibly disorganized due to operations, and positive identification of friendly forces versus threats is harder.

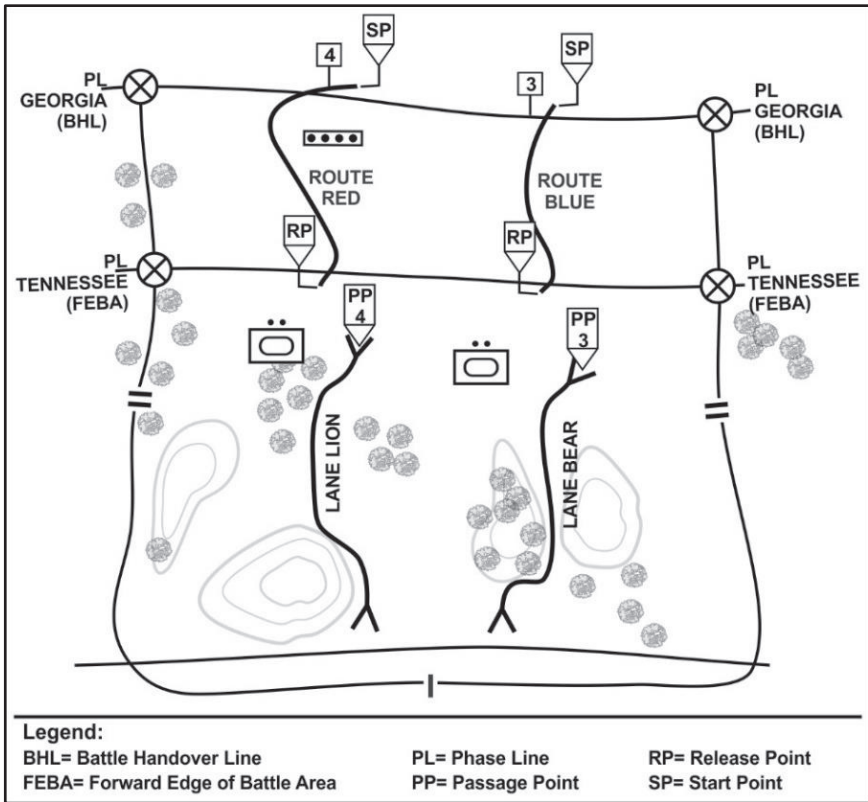


Figure 7-6. Rearward passage of lines

SECTION IX – OBSTACLE REDUCTION

7-134. **Mobility tasks** are those combined arms activities that mitigate the effects of obstacles to enable freedom of movement and maneuver (ATP 3-90.4/MCWP 3-17.8). The platoon leader/*platoon commander* must understand the challenges presented by various types of obstacles and the capabilities and limitations of the assets the platoon and its parent unit can employ to defeat them.

7-135. Obstacles are any obstructions designed or employed to disrupt, fix, turn, or block the movement of an opposing force, and to impose additional losses in personnel, time, and equipment on the opposing force. They are usually covered by observation and enhanced by direct or indirect fires, and as such, the platoon leader/*platoon commander* needs to plan for this possibility. There are two categories of obstacles: natural (existing) and manmade (reinforcing).

NATURAL OBSTACLES

7-136. Natural obstacles are inherent aspects of the terrain that impede movement and maneuver. They include things such as vegetation, water features, soil composition, and surface configuration. Natural obstacles are described as being existing. See ATP 3-90.4/MCWP 3-17.8 for more information.

7-137. The platoon leader/*platoon commander* should pay particular attention to natural obstacles that meet the following criteria:

- Ravines, gullies, gaps, or ditches more than three meters wide.
- Streams, rivers, or canals more than one meter deep.
- Mountains or hills with a slope in excess of 60 percent (30 degrees).
- Lakes, swamps, and marshes more than one meter deep.
- Tree stumps and large rocks more than 18 inches high.
- Forests or jungles with trees eight inches or more in diameter and with less than four meters of space between trees on a slope.

MAN-MADE OBSTACLES

7-138. Manmade obstacles are those impediments to movement and maneuver constructed by humans. They fall into two categories: explosive and nonexplosive. Manmade obstacles can be further described as being existing (structures, cultural obstacles, or human obstacles) or reinforcing. Reinforcing obstacles are designed and employed to take advantage of the natural restrictiveness of the terrain. For example, they reinforce the existing (whether natural or manmade) obstacles already present.

MINEFIELDS

7-139. The minefield is the most common reinforcing obstacle the platoon encounters on the battlefield. It is easier and quicker to emplace than other obstacles and can be very effective in destroying vehicles. The minefield may be emplaced in several ways: by hand, by air or artillery delivery using scatterable mines or by mechanical means.

ANTITANK DITCH OR ROAD CRATER

7-140. The AT ditch may be reinforced with wire and mines to make it more complex and more difficult for the attacker to overcome. In addition, soil from the ditch can be built up into a berm on the emplacing unit side. Road craters can be rapidly emplaced and are especially effective where restricted terrain on the sides of a road or trail prevents a bypass. Craters are at least 1.5 meters in depth and 6 meters in diameter, and are usually supplemented with mines and wire.

ABATIS OR LOG CRIB

7-141. An abatis provides an effective impediment to vehicular movement. Trees are felled either by sawing or by use of explosives; the cut is made at least 1.5 meters above the ground, with the main trunks crisscrossed and pointed toward the enemy at

approximately a 45-degree angle. The abatis is usually about 75 meters in depth and is ideally located on trails where there is no bypass; the trunk of each tree should remain attached to the stump to form an obstacle on the flanks of the abatis. Abatis are usually mined or booby-trapped. A log crib is a framework of tree trunks or beams filled with dirt and rock. It is used to block roads or paths in wooded and mountainous terrain.

WIRE OBSTACLES

7-142. Wire obstacles provide an effective and flexible antipersonnel barrier; they are frequently employed on dismounted avenues of approach as tanglefoot or triple standard concertina. Employed in-depth or in conjunction with mines, wire obstacles are also very effective against tanks and similar vehicles. A single wire obstacle, however, will have little effect on armored vehicles; the sprocket of M1-series tanks is designed to cut wire.

TANK WALL AND BERM

7-143. Tank walls and berms are constructed of dirt and rock to slow or canalize enemy tanks. They can also create “belly” shots for the defender while the attacker is unable to engage.

TENETS OF BREACHING OPERATIONS

7-144. Breaching operations are characterized by tenets integrated into the planning process. The tank platoon leader/*platoon commander* must understand the tenets of breaching operations and roles the platoon may be tasked to execute during obstacle reduction (refer to ATP 3-90.4/MCWP 3-17.8 for more information). These breaching tenets should be applied whenever an obstacle is encountered in the AO, whether during an attack or a route clearance operation:

- Intelligence.
- Breaching fundamentals.
- Breaching organization.
- Mass.
- Synchronization.

INTELLIGENCE

7-145. The platoon leader/*platoon commander* must identify how the enemy is using the terrain and obstacles to minimize the risk of surprise. The company commander (through the battalion/squadron S-2) can provide a situation template, which is a graphic depiction of expected enemy dispositions based on threat/*adversary* doctrine. The platoon leader/*platoon commander*, however, is responsible for analyzing all the elements of METT-TC within their AO.

BREACHING FUNDAMENTALS

7-146. Suppress, obscure, secure, reduce, and assault are the breaching fundamentals that must be applied to ensure success when breaching against a defending enemy. These fundamentals always apply, but may vary based on METT-TC.

Suppress

7-147. Suppress is a tactical mission task that results in temporary degradation of the performance of a force or weapons system below the level needed to accomplish the mission (refer to FM 3-90-1 for more information). The purpose of suppression during breaching operations is to protect forces reducing and maneuvering through an obstacle.

Obscure

7-148. Obscuration protects friendly forces conducting obstacle reduction and the passage of assault forces. Correctly employed, obscuration degrades enemy observation and target acquisition without significantly degrading friendly fires and control, and conceals friendly activities and movement from the enemy. Obscuration smoke deployed on or near the enemy's position minimizes its vision. Screening smoke employed between the reduction area and the enemy conceals movement and reduction activities, and degrades enemy ground and aerial observation. Obscuration may also be used to allow the support force to move into position if a covered and concealed route is not available. Obscuration must be carefully planned, and the platoon leader/*platoon commander* should consider the effect of the military aspects of weather, particularly wind, when planning and coordinating for obscuration effects (see chapter 2).

Secure

7-149. Secure the breach site to prevent the enemy from interfering with obstacle reduction or passage of friendly forces through the cleared lanes. Security must be effective against all types of enemy elements that can influence these actions, including outposts and fighting positions near the obstacle, overwatching units, and counterattack forces.

Reduce

7-150. Reduction is the creation of lanes through or over an obstacle to allow an attacking force to pass. This is normally accomplished by engineer assets, which the tank platoon may be responsible for securing during the breach operation. However, the tank platoon must also be prepared to conduct a mechanical breach without engineer support, using organic mine clearing blades and mine clearing rollers (refer to ATP 3-90.4/MCWP 3-17.8 for more information).

7-151. The number and width of lanes created varies with the enemy situation, the assault force's size and composition, and the scheme of maneuver. The lanes must allow the assault force to rapidly pass through the obstacle. The breach force reduces, proofs, marks, and reports lane locations and the lane-marking method to higher HQ. Follow-on units further reduce or clear the obstacle as required. Reduction begins when effective

suppression and obscuration are in place, the obstacle has been confirmed, and the reduction area (point of breach) is secure.

Assault

7-152. A breaching operation is not complete until friendly forces have assaulted to destroy the enemy on the far side of the obstacle that is capable of placing or observing direct and indirect fires on the reduction area. Also, if planned, battle handover with follow-on forces must be complete.

Mass

7-153. Conduct breaching by rapidly applying concentrated efforts at a point to reduce the obstacles and penetrate the defense. Direct massed combat power against the enemy's weakness. The location selected for breaching depends largely on the weakness in the enemy's defense, where its covering fires are minimized. If friendly forces cannot find a natural weakness, they create one by fixing the majority of the enemy force and isolating a small portion of it for attack.

Synchronization

7-154. Breaching operations require precise synchronization of the breaching fundamentals by the support, breach, and assault forces. Failure to synchronize effective suppression and obscuration with obstacle reduction and assault can result in rapid and devastating losses of friendly personnel in the obstacles or the enemy's kill zone.

BREACHING ORGANIZATION

7-155. The platoon can be assigned the task of support, breach, or assault force. The support force's primary responsibility is to eliminate the enemy's ability to interfere with a breach operation. The breach force helps in the passage of the assault force by creating, proofing (if necessary), and marking lanes. The assault force's primary mission is to destroy the enemy and seize terrain on the far side of the obstacle to prevent the enemy from placing direct fires on the created lanes.

SUPPORT FORCE

7-156. As the support element, the platoon usually leads movement of the breach elements. After identifying the obstacle, it moves to covered and concealed areas and establishes support-by-fire positions. The support force leader sends a voice or digital SPOTREP to the commander. This report must describe the location and complexity of the obstacle, the composition of enemy forces that are overwatching the obstacle, and the location of possible bypasses. The commander decides whether to maneuver to a bypass or to breach the obstacle.

Note. Leaders should be aware that a bypass may lead to an enemy kill zone.

7-157. In either case, the support force suppresses any enemy elements that are overwatching the obstacle to allow the breach force to breach or bypass the obstacle. The support force should be in position to request suppressive artillery fires and smoke for obscuration. As the breach and assault forces execute their missions, the support force shifts or ceases supporting fires. Because the enemy is likely to engage the support force with artillery, the support force must be prepared to move to alternate positions while maintaining suppressive fires (see figure 7-7).

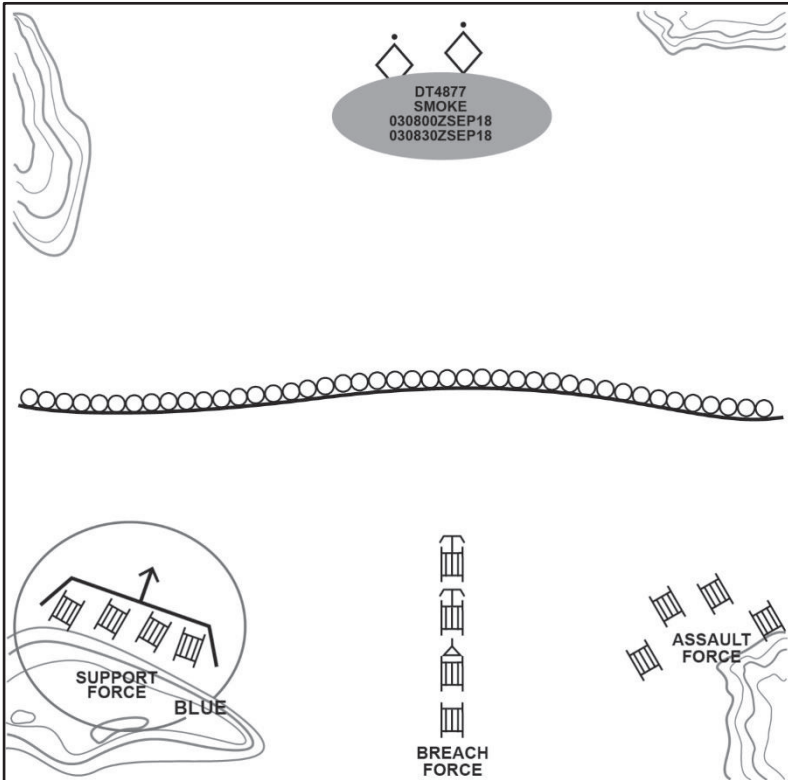


Figure 7-7. Support force

BREACH FORCE

7-158. As the breach force, the platoon leader/*platoon commander* receives a voice or digital SPOTREP identifying the location of the obstacle or bypass. It then must fulfill these responsibilities:

- Provide local security for the breach site as necessary.
- Conduct the actual breach. The breach force creates, proofs, and marks a lane through the obstacle, or secures the bypass. It may be task-organized with engineer assets or may conduct a mechanical breach without engineers (see figure 7-8 for an example of a mechanical breach).
- Move through the lane to provide local security for the assault force on the far side of the obstacle. In some instances, the breach force may move to hull-down firing positions that allow it to suppress enemy elements overwatching the obstacle. At other times, it may assault the enemy, with suppressive fires provided by the support force.

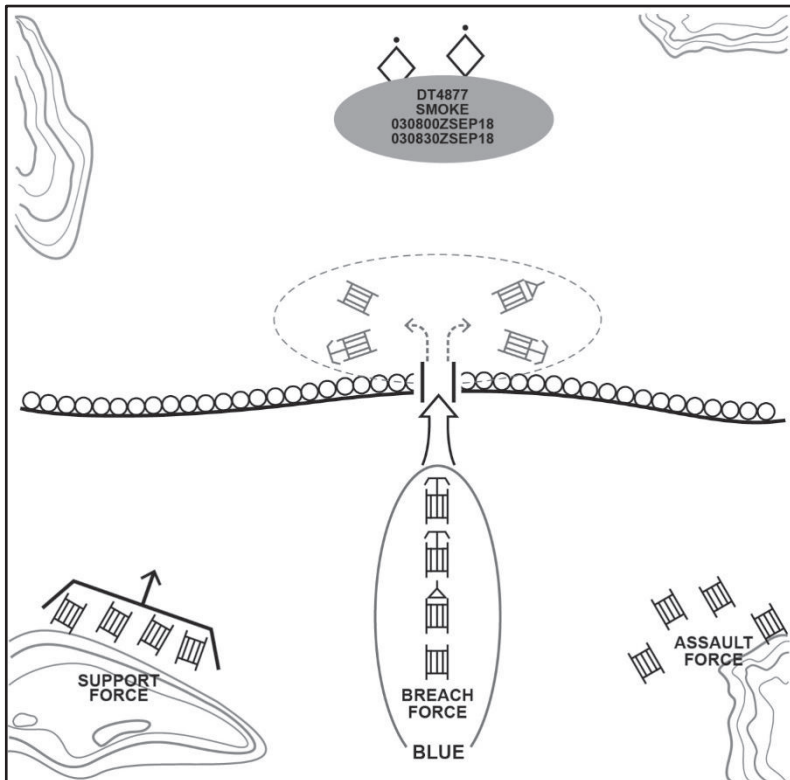


Figure 7-8. Breach force without engineer support

Breaching Methods

7-159. Engineer assets like the assault breacher vehicle are designed for obstacle reduction, however, the platoon can create a lane by itself if it is equipped with the assets required to breach the type of obstacle encountered. Three breaching methods are available to the platoon:

- Mechanical breaching, usually with mine plows (also called mine clearing blades) or mine rollers.
- Explosive breaching, employing such means as the mine-clearing line charge, M173 line charge, or 1/4-pound blocks of Trinitrotoluene (known as TNT).
- Manual breaching, which involves probing by hand or using such items as grappling hooks, shovels, picks, axes, and chain saws. Manual breaching is the least preferred method for the tank platoon.

7-160. In extreme cases, the commander may order the platoon to force through an obstacle. This technique requires the breach force to move in column formation through the obstacle location. If available, a disabled vehicle can be pushed ahead of the lead breach vehicle in an attempt to detonate mines.

Creating and Proofing the Lane

7-161. The mine plow is the breaching device most commonly employed by the tank platoon. The battalion/squadron or company commander may allocate one to three plows per platoon. When properly equipped and supported, the platoon can create up to two lanes through an obstacle. Plow tanks lead the breach force. Immediately following them are vehicles that proof the lane. These are usually tanks equipped with mine rollers. This process ensures that the lane is clear.

7-162. If the location or dimensions of the obstacle are unknown, the platoon leader/*platoon commander* may choose to lead with tanks equipped with mine rollers to identify the leading edge of the obstacle. If the platoon is allocated one plow, the platoon sergeant's wingman normally serves as the breach tank. The platoon sergeant follows immediately behind to proof the lane and provide overwatch. The platoon leader's/*platoon commander's* section follows the platoon sergeant. If the platoon has two or more plows, it can create multiple lanes. The wingman tanks are normally equipped with the plows, while the section leader tanks follow to proof the lanes and provide overwatch. (Refer to ATP 3-90.4/MCWP 3-17.8 for more information.)

Marking the Lane

7-163. After the lane is created and proofed, it can then be marked to ensure safe movement by vehicles and personnel; this is critical for follow-on forces that may not know the exact location of the cleared lane. Distinctive markers must show where the lane begins and ends. Initial lane marking begins with entrance and exit markers and a left-handrail. See ATP 3-90.4/MCWP 3-17.8, appendix B for further discussion on lane marking.

Note: As the breach force for a deliberate breach, a tank platoon should be augmented with combat engineers to properly mark the lane and conduct traffic control for follow-on forces.

7-164. To minimize the necessary breaching time, the proofing vehicle may simultaneously mark the lane. Unit SOPs dictates marking methods and materials, which commonly include the following:

- Cleared lane mechanical marking system.
- Pathfinder system.
- Engineer stakes with tape.
- Guides.
- Chemical lights.
- Expended shell casings.

Completing the Breach

7-165. Throughout the operation, the platoon leader/*platoon commander* provides continuous updates of the breach force's progress to higher HQ and other elements involved in the breach. The platoon leader/*platoon commander* also coordinates with the support force for suppressive fires.

7-166. After marking is complete, the platoon leader/*platoon commander* uses voice and digital systems to report the location of the lane and the method of marking to expedite the movement of the assault force. Digital overlays enable units to move quickly to the breach lanes using GPS or POSNAV.

ASSAULT FORCE

7-167. The platoon assigned as the assault force helps the support force or follows the breach force while maintaining cover and dispersion. Once a lane is opened through the obstacle, the assault force then moves through the breach (see figure 7-9). It secures the far side of the obstacle by physical occupation or continues the attack per the commander's intent.

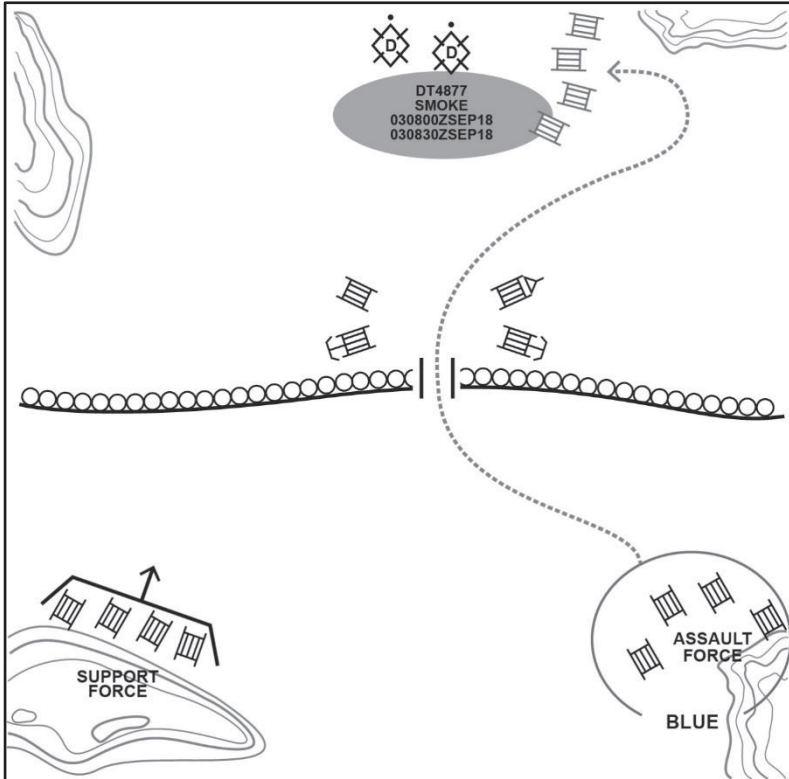


Figure 7-9. Assault force

7-168. Tank platoons are ideally suited for assault force operations against mobile enemy defenses in open terrain. Consideration should be given to have Infantry as an assault force attacking dug-in enemy positions in close terrain.

SECTION X – RETAINED/DETAINED PERSONS

7-169. All persons captured, personnel detained or retained by U.S. Armed Forces during the course of military operations, are considered “detained” persons until their status is determined by higher military and civilian authorities. The unit SOP or company OPORD should designate specific enemy prisoners of war handling procedures, such as detainee collection points, responsibilities for safeguarding

prisoners, and procedures for movement of prisoners. If enemy soldiers want to surrender, it is the tank platoon's responsibility to take them into custody and control them until they can be evacuated. If operational tempo does not allow for the platoon to take custody, the platoon must report the location of enemy soldiers to higher HQ.

7-170. Detainees and captured enemy equipment or materials often provide critical combat information. The capturing unit may perform tactical questioning. Tactical questioning is considered direct questioning (by Department of Defense personnel) of a captured or detained person to obtain time-sensitive tactical intelligence (at or near the point of capture) that is consistent with applicable laws (refer to FM 3-63). In tactical situations, the platoon has specific procedures and guidelines for handling prisoners and captured materiel.

7-171. Upon capture, Service members must process detainees using the search, silence, segregate, speed, safeguard, and tag (known as the "five Ss and T" technique). This technique provides a structure to guide Service members in conducting detainee operations until they transfer detainee custody to another authority or location. The five Ss and T technique is as follows:

- Search. Neutralize a detainee and confiscate weapons, personal items, and items of potential intelligence/evidentiary value.
- Silence. Prevent detainees from communicating with one another or making audible clamor such as chanting, singing, or praying. Silence uncooperative detainees by muffling them with a soft, clean cloth tied around their mouths and fastened at the backs of their heads. Do not use duct tape or other adhesives, place a cloth or objects inside the mouth, or apply physical force to silence detainees.
- Segregate. Segregate detainees according to policy and SOPs (segregation requirements differ from operation to operation). The ability to segregate detainees may be limited by the availability of manpower and resources at the point of capture. At a minimum, try to segregate detainees by grade, gender, age (keeping adults from juveniles and small children with mothers), and security risk. Military intelligence and military police personnel can provide additional guidance and support in determining the appropriate segregation criteria.
- Speed. Quickly remove detainees from the continuing risks associated with other combatants or sympathizers who may still be in the area of capture. If there are more detainees than the Service members can control, call for additional support, search the detainees, and hold them in place until reinforcements arrive.
- Safeguard. Protect detainees and ensure the custody and integrity of all confiscated items. Soldiers must safeguard detainees from combat risk, harm caused by other detainees, and improper treatment or care. Report all injuries. Correct and report violations of U.S. military policy that occur while safeguarding detainees. Acts/omissions that constitute inhumane treatment are violations of the law of war and, as such, must be corrected immediately. Simply reporting violations is insufficient. If a violation is ongoing, a Service member has an obligation to stop the violation and report it.

- Tag. Ensure that each detainee is tagged using DD Form 2745, *Enemy Prisoner of War (EPW) Capture Tag*. Confiscated equipment, personal items, and evidence is linked to the detainee using the DD Form 2745 control number. When a DA Form 4137, *Evidence/Property Custody Document*, is used to document confiscated items, it is linked to the detainee by annotating the DD Form 2745 control number on the form.

7-172. To ensure accountability, each detainee is tagged by the capturing unit using DD Form 2745. Military police at detainee collection points and detainee holding areas check each tag for—

- Date and time of capture.
- Capturing unit.
- Point of capture.
- Circumstances of capture.

7-173. All detained persons shall immediately be given humanitarian care and treatment. U.S. Armed Forces will never torture, maltreat, or purposely place detained persons in positions of danger. There is never a military necessity exception to violate these principles.

Chapter 8

Augmenting Combat Power

The tank platoon takes full advantage of available combined arms assets to accomplish its mission and to reduce its vulnerability on the battlefield. Combined arms integration may include indirect fires, protection, and air ground operations. These assets are not organic to the tank platoon, but they may be available through its parent battalion/squadron or company. The platoon leader/*platoon commander* must understand the capabilities and limitations of each combined arms asset to effectively employ them.

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SECTION I – FIRES

8-1. Mortars and FA are the primary means of indirect fire support available to the tank platoon. In addition to understanding the capabilities and limitations of these assets, platoon leaders/*platoon commanders* and their tank commanders must know how to request fires. They must also understand how to work with the FIST at company team level to plan and coordinate indirect fires. (Refer to ATP 3-09.30 and ATP 3-09.32/MCRP 3-16.6A/NTTP 3-09.2/AFTTP 3-2.6 for more information.)

EMPLOYMENT CONSIDERATIONS

8-2. Fires can be extremely effective when used for the purposes outlined in the following discussion.

DESTRUCTION

8-3. High explosive rounds, mounted with variable time fuses, can be used to disperse dismounted Infantry and vehicles that are in the open. The high explosive rounds have the capability to destroy or disable some armored vehicles and structures.

SUPPRESSION

8-4. The high explosive rounds can be used to force the enemy to button up or move to less advantageous positions.

8-5. Normally, suppression missions are fired on planned targets, and a length of time to continue firing (duration) is associated with the call for fire.

SMOKE

8-6. Mortar support, provided by the combined arms battalion mortar platoon or squadron troop mortars, is the most rapid and responsive means of indirect smoke delivery.

8-7. The tank platoon leader/*platoon commander* coordinates the planning and execution of smoke missions with the commander and the company FIST. For obscuration and screening, WP rounds are used. WP rounds can degrade the effectiveness of friendly thermal sights and can also produce casualties to friendly personnel.

8-8. As discussed in chapter 2, the platoon leader/*platoon commander* takes into consideration wind speed and direction when requesting smoke to ensure the obscurant effect does not work in the enemy's favor.

Note. When employing WP rounds ensure it's per current ROE for the specific AO.

ILLUMINATION

8-9. Illumination rounds illuminate an area or enemy position during periods of limited visibility. Infrared illumination can increase the effectiveness of the tank platoon's thermal sights. This helps the platoon in gathering information, adjusting artillery fire, and engaging enemy targets. Ground burst illumination can also be used to mark enemy positions, mark for close air support, and to provide a thermal TRP for control of fires.

8-10. Units must be careful not to illuminate friendly positions. Illumination rounds that initiate directly above or behind the tank platoon enhance the enemy's ability to identify and engage the platoon. Also, as U.S. night vision devices may or may not be superior to those of near-peer threats, illuminating the battlefield may be unnecessary or even counterproductive.

MORTARS

8-11. Mortars provide immediate and responsive indirect fire support to maneuver forces. Each U.S. Army combined arms battalion has four 120-mm mortar systems organized into two sections. Each Cavalry squadron has six 120-mm mortar systems. *Task organized Marine Corps tank companies or company teams may be supported by an 81-mm mortars platoon from an Infantry or Light Armored Reconnaissance battalion. An Infantry battalion mortar platoon has six 81-mm mortar systems. A Light Armored Reconnaissance mortar platoon has two 81-mm mortar systems. (Reference ATP3-21.90/MCTP 3-01D for more information.)*

CAPABILITIES

8-12. The maximum effective range of the 120-mm mortars is 7200 meters *and 5800 meters for the 81-mm mortars*. Both can provide a heavy volume of accurate, sustained fires. They are ideal weapons for attacking a variety of targets, including the following:

- Infantry in the open.
- Targets on reverse slopes.
- Targets in narrow ravines or trenches.
- Targets in forests, towns, and other areas that are difficult to strike with low-angle fires.

8-13. In addition to these highly flexible targeting options, mortars have the following capabilities and advantages:

- Rapid response time.
- Effective against low-density targets.
- Highly destructive target effects.

LIMITATIONS

8-14. Mortars are limited in the following ways:

- Maximum range is limited in comparison to the indirect fire support capability of FA elements.
- Cannot be used against targets inside their minimum indirect fire effective range (200 meters from the 120-mm and *83 meters for the 81-mm mortar tube position*).
- Limited types of ammunition, compared to artillery rounds.
- Mortar elements carry limited amounts of ammunition.
- Collateral damage concerns in an urban environment.
- Clearance of air.
- Limited effectiveness when used against armored vehicles.

FIELD ARTILLERY

8-15. Tank platoon leaders/*platoon commanders* must fully understand how to use FA support to their best advantage. It is often their primary means of delaying and disrupting enemy formations and suppressing enemy positions. The FA can provide immediate, responsive, accurate fires with a wide variety of munitions (see table 8-1.)

Table 8-1. Indirect fire weapons capabilities

CALIBER	81-mm	120-mm (M121)	155-mm Self-Propelled/Towed
LOCATION	Combined Arms Battalion (CAB)/Infantry and LAR Battalions	CAB	Brigade Combat Team/Artillery organizations
MAX RANGE (High explosive [HE])(meters)	5600	7200	24,000 30,000 (RAP)
PLANNING RANGE (meters)	(2/3 max)	(2/3 max)	(2/3 max)
PROJECTILES	HE Smoke (White phosphorous [WP] & Red phosphorous) Illumination Infrared Illumination	HE Smoke (WP) Illumination Infrared Illumination	HE Smoke (WP& High Concentration [HC]) Illumination Chemical RAP Excalibur FASCAM
MAX RATES OF FIRE	30 RPM for 2 min. then 15	16 RPM for 1 min.	4 RPM for 2 min. then 1
SUSTAINED RATE OF FIRE (RPM)	15	4	2
MINIMUM RANGE (meters)	83	200	Direct fire
FUZES	PD VT Time dly MO	PD VT Time dly MO	PD VT CP MT MTSQ dly
Danger Close	600 meters	600 meters	600 meters
Legend CP - concrete piercing, dly- delay, Excalibur- precision guided/extended range, FASCAM- family of scatterable mines, LAR- light armored reconnaissance, Min- minute, mm-millimeters, MO- multi-option, MT- mechanical time, MTSQ - mechanical time super quick, PD- point detonating, RAP- rocket-assisted projectile, RPM- rounds per minute, Time- adjustable time delay, VT- variable time			

Note. For information on risk estimate distances, refer to ATP 3-09.32/MCRP 3-16.6A/NTTP 3-09.2/AFTTP 3-2.6, appendix H.

8-16. FA support is provided by FA battalions which support the BCT/*ground combat element*. The tank platoon generally receives FA support through the company FIST.

CAPABILITIES

- 8-17. In support of the tank platoon, FA elements can accomplish the following tasks:
- Provide immediate suppression on unplanned targets.
 - Provide continuous fire support on planned targets in all weather conditions and types of terrain.
 - Allow platoon leaders/*platoon commanders* to shift and mass fires rapidly.
 - Offer a variety of conventional shell and fuse combinations.
 - Provide obscuration and screening smoke to conceal movement.
 - Fire battlefield illumination rounds as necessary.

LIMITATIONS

- 8-18. The FA support has the following limitations:
- Limited capability against moving targets.
 - Limited capability to destroy point targets without considerable ammunition expenditure or use of specialized munitions during low-angle firing.
 - Highly vulnerable to detection by enemy target acquisition systems during high-angle firing.
 - Restricted low-angle fires in an urban environment. (Refer to ATP 3-09.42 for more information.)

FIRE SUPPORT TEAMS

8-19. Fire support teams are assigned to the FA battalions and attached to maneuver units for combat operations. The FIST is a valuable resource because of its communications link with the artillery. Additionally, the FIST operates a M3A3 Bradley fire support team vehicle, allowing the FIST to maneuver with the tank platoon across the battlefield.

8-20. Marine Corps tank company FISTs are led by the company XO and assigned a joint terminal attack controller/forward air controller (FAC) from the tank battalion's headquarters and service (H&S) company or from an external unit to coordinate close air support. The Artillery Forward Observer or scout is attached to the tank company from supporting artillery battalions. A crewman from the tank company HQ section may be trained to coordinate 81-mm fires. The FIST operates from the tank company's HQ section and controls Marine Air Ground Task Force fires through the use of the forward observer/FAC kits.

Support Considerations

8-21. Fire support teams are organized, equipped, and trained to provide the following personnel and support to the company:

- Company fire support officer/*XO* as fire support advisor/*FIST* leader and coordinator.
- A communications link to all available indirect fire support assets.

Communication

8-22. The *FIST* normally monitors the following radio nets:

- Attached/*Organic* unit command net (voice).
- Battalion/squadron mortar fire direction/*mortar conduct of fire* net (digital/*voice*).
- FA battalion fire direction/*artillery conduct of fire* net (digital/*voice*).
- Battalion/squadron fire support net (voice).
- Joint air request net.
- *Tactical air control party net* (voice).
- *Tactical air direction net* (voice).

8-23. The *FIST* serves as the net control station on the unit fire support net, while the fire support element serves as the net control station on the maneuver battalion/squadron fire support net. The *FIST* relays calls for fire to supporting artillery on a digital/*voice* fires net or sends the fire mission to the mortar platoon or section. The command net allows the *FIST* to monitor operations and links the *FIST* to the commander and platoon leaders/*platoon commanders* for planning and coordination.

FIRE REQUEST PROCESS

8-24. Though the *FIST* is the primary element responsible for requesting and adjusting indirect fire, every leader in the tank platoon must be familiar with the request and adjustment process and if necessary, make the call for fire themselves.

FIRE REQUEST CHANNELS

8-25. All requests for indirect fire support are normally sent through the *FIST* on the company command net and the commander approves the request. The *FIST* selects the best available fire support asset to engage a target. Adjustments to the fire mission normally are also sent to the *FIST*, which then relays the message to the artillery unit on a digital fire direction net or to the battalion mortars on the fire support net.

8-26. Besides specific requests sent to the FIST, the platoon can request fire support in several other ways:

- Calls for fire can result from SPOTREPs sent on the company command net; the company FIST eavesdrops on the net and requests fires on targets of opportunity and on targets approved by the commander.
- Requests for fire can be submitted through preformatted SPOTREPs and contact reports sent via the joint capabilities release system.

FIRE DIRECTION AND CONTROL PROCEDURES

8-27. The following are the different methods and procedures for indirect fire.

INITIAL CALL FOR FIRE

8-28. The standard call for fire includes three basic transmissions, which in turn comprise six elements:

- Observer identification and WARNORD (first transmission).
- Target location (second transmission).
- Target description, method of engagement, and method of fire and control (third transmission).

OBSERVER IDENTIFICATION AND WARNING ORDER (FIRST TRANSMISSION)

8-29. Observer identification tells the fire direction center (FDC) who is calling. The WARNORD clears the net for the fire mission and tells the FDC the type of mission, size of element, and the method of locating the target. The types of indirect fire missions are the following:

- Adjust fire. This is used when the observer is uncertain of the exact target location. The observer says, ADJUST FIRE.
- Fire for effect. The observer strives for first-round fire for effect when they are sure the target location is correct. The observer should also be sure the rounds of the first volley have the desired effect on the target so little or no adjustment is required. The observer announces, FIRE FOR EFFECT.

Note. With digital systems, properly updated positioning data and an accurate range to the target provide extremely accurate target location. This enables observers to call FIRE FOR EFFECT on the first transmission.

- Suppression. The word “suppress” is used to quickly bring fire on a preplanned target when unable to observe. The following is an example of a simplified call for fire and is sent in one transmission: THUNDER 11—THIS IS RED 1—SUPPRESS AF2401—OVER. The target description is not announced.

- Immediate suppression. This is used to bring fire quickly on a planned target or a target of opportunity that is firing at a friendly unit or aircraft. As an example, the observer says, THUNDER 11— THIS IS RED 2— IMMEDIATE SUPPRESSION AF2402—OVER. Target description is not announced.
- Immediate smoke. This is used to place smoke quickly on a planned target or a target of opportunity that is firing at a friendly unit. Sample transmission: THUNDER 11— THIS IS RED 4—IMMEDIATE SMOKE AF2405— OVER.

8-30. The polar and shift methods are announced to the FDC as part of the first transmission. They are covered more in the following paragraph.

8-31. Following the type of mission, the method of target location is announced; this prepares the FDC to receive the data sent by the observer and apply it to locate the target. The three methods for locating targets are grid, polar plot, and shift from a known point. The polar and shift methods are announced to the FDC. If the observer does not specify either polar or shift, the FDC knows the grid method is being used; the word “grid” is not announced. Example: THUNDER 11—THIS IS RED 3—FIRE FOR EFFECT— POLAR—OVER.

TARGET LOCATION (SECOND TRANSMISSION)

8-32. The third element of the call for fire is target location. There are five methods of establishing target location. They are grid, laser grid, polar plot, laser polar, and shift from known point. When utilizing precision targeting devices to establish location, it is required to transmit the target location error in the target location portion of the call for fire request.

Grid Method

8-33. In the grid method, the target location normally includes a two-letter grid zone identifier with eight digits (example: AB13572468). The direction from the observer to the target (in mils, if possible) must be given to the FDC after the call for fire, but before the first adjusting rounds are shot. With the likelihood of operating in built-up areas, crewmembers should call for fire using eight- or ten-digit grids to reduce collateral damage.

Laser Grid Method

8-34. The laser grid method is the same as described paragraph 8-33 except the target grid is given at a greater level of accuracy (8 to 10 digits depending on targeting device accuracy). The far target locator can be used to acquire the target. The transmission also includes the target location error (if known). For example, GRID AB1357924680, target location error 4.0 OVER.

Note. A mission is not a laser grid mission just because the observer used a laser to determine the initial target location. If the observer plans to send normal left, right, add, or drop corrections, the mission is a normal grid mission. The mission is a laser grid mission only when the method for subsequent corrections is laser burst corrections.

Polar Plot Method

8-35. This method requires that the observer and the FDC know the observer's exact location. The observer determines the direction (to the nearest 10 mils) of the observer-target (known as OT) line and the distance (to the nearest 100 meters) from the position to the target.

Laser Polar Plot Method

8-36. The laser polar method differs from a polar mission in that the direction is determined to the nearest mil (instead of 10 mils) and the distance is to the nearest 10 meters (instead of 100).

Shift From a Known Point Method

8-37. This is the least preferred and most difficult method of target location. The observer may have one or more known points in the area of responsibility and only works if the observer and the FDC have a common known point such as an artillery target or significant feature like a bridge or tower. To locate the target, the observer first determines the direction to the known point to the nearest 10 mils. If the observer has no compass, direction can be determined by using a map and protractor or by using the binocular reticle pattern and a known direction to the known point. The observer then determines direction to the target using the "right add, left subtract" rule.

8-38. The observer then determines the lateral and range shifts (see figure 8-1). Lateral shifts are left or right from the known point to the OT line and are given to the nearest 10 meters. Range shifts are given as ADD (when the target is beyond the known point) or DROP (when the target is closer than the known point). Range shifts are given to the nearest 100 meters. (Refer to ATP 3-09.30 for more information.)

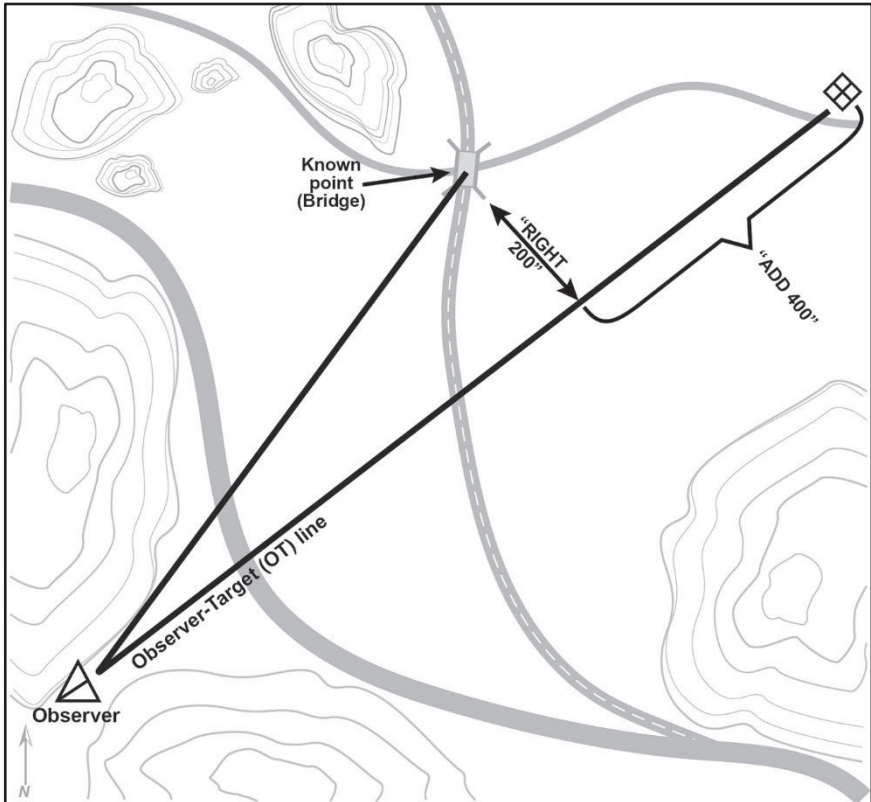


Figure 8-1. Lateral and range shifts from a known point

TARGET DESCRIPTION, METHOD OF ENGAGEMENT, AND METHOD OF FIRE AND CONTROL (THIRD TRANSMISSION)

8-39. The observer includes the target description, method of engagement, and method of fire and control in the call for fire using the guidelines discussed in the following paragraphs 8-40 through 8-44 on pages 8-13 through 8-14.

Target Description

8-40. The observer describes the target to the FDC; the FDC then determines the type and amount of ammunition needed. The target description should be brief but accurate. This is the last required element in the call for fire.

8-41. A target description may be DISMOUNTED INFANTRY SQUAD IN THE OPEN or TWO TANKS IN TURRET DOWN POSITION.

Method of Engagement

8-42. The observer requests how to attack the target (including type of ammunition, fuse, and distance from friendly personnel). The FDC may change the ammunition type and fuse based on availability or other constraints. If the target is within 600 meters of friendly personnel, the observer announces DANGER CLOSE.

Method of Fire and Control

8-43. The observer states who will give the command to begin firing. If the observer wants to control the time of firing, they say, AT MY COMMAND. The FDC tells the observer when the unit is ready to fire. At the proper time, the observer says, FIRE. If the observer does not say, AT MY COMMAND, the FDC directs the designated unit(s) to fire as soon as the platoon or battery is ready. (See table 8-2).

Table 8-2. Methods and procedures for indirect call for fire

<i>FIRST TRANSMISSION</i>	<i>THIRD TRANSMISSION</i>
1. Observers Identification (call signs) 2. Warning Order Adjust fire Fire for effect Suppress Immediate suppression/immediate smoke	4. Target Description Type Activity Number Degree of protection Size and shape (length/width or radius)
<i>SECOND TRANSMISSION</i>	5. Method of Engagement Type of adjustment Danger close Mark Ammunition Distribution
3. Target Location Grid coordinate Shift from a known point Polar plot	6. Method of Fire and Control Method of fire Method of control

ADJUSTING INDIRECT FIRE

8-44. Once the call for fire has been made, the observer's next concern is to get rounds on the target. If the observer can locate the target accurately, fire for effect is requested in the initial call for fire. When the observer cannot accurately locate the target, for any reason such as deceptive terrain, lack of identifiable terrain features, or poor visibility, they must execute an adjustment to bring fires on the target. Normally, one artillery piece or mortar is used in adjustment.

8-45. The observer must first pick an adjusting point. For a destruction mission (precision fire), the target is the adjusting point. For an area target (area fire), the observer must pick a well-defined adjusting point at the center of the area or close to it. The observer must spot the first adjusting round and each successive round and send range and deviation corrections, as required, back to the FDC until fire hits the target. The observer spots by relating the burst or group of bursts to the adjusting point. (Refer to ATP 3-09.30 for more information.)

Deviation Spotting

8-46. As applied to deviation (left or right), spotting involves measuring the horizontal angle (in mils) between the burst and the adjusting point (see figure 8-2). A burst to the right (or left) of the target is spotted as (number) MILS RIGHT (LEFT).

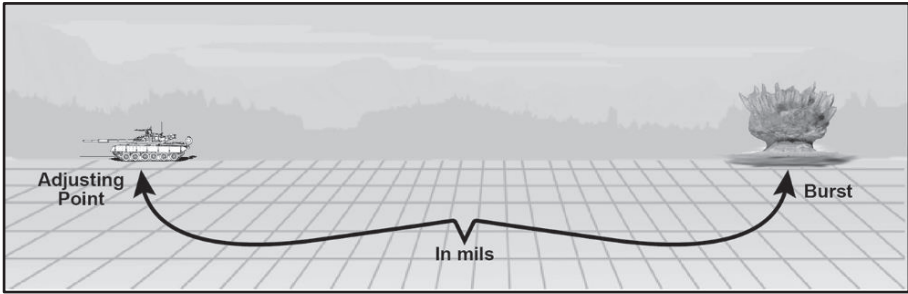


Figure 8-2. Deviation spotting

Reticle Method

8-47. The mil scale on military binoculars, or the hand-and-fingers method, is a technique to determine deviation. In the M22 and M24 binoculars, the horizontal and vertical scales are divided into 10-mil increments with shorter hash marks at 5 mil increments. The binocular reticle is shown in figure 8-3. The scale cannot be used to determine vertical angle. Only a leveled measuring device can accurately measure vertical angle. The hand-and-fingers technique may be used as shown in figure 8-4 on page 8-16.

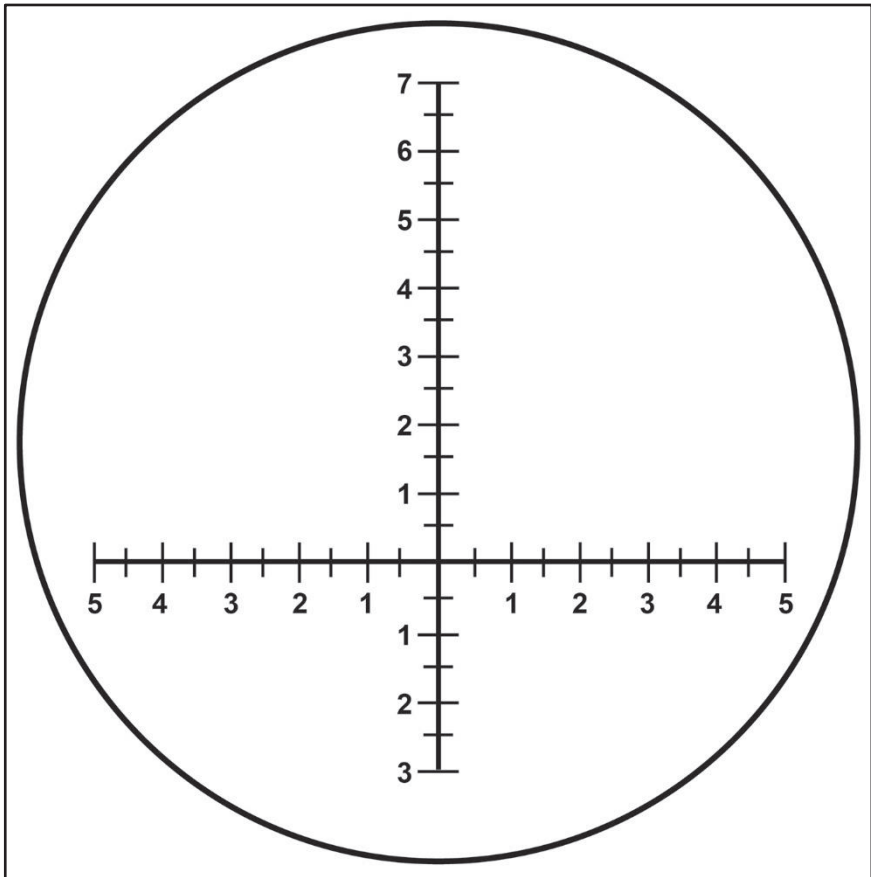


Figure 8-3. M22 and M24 binocular reticle pattern

Hand-and-Finger Method

8-48. When all other means to measure angular deviation are not available, the observer may use the hand and fingers as a measuring device. Figure 8-4 on page 8-16 shows approximate numbers for an average hand.

8-49. Each tank commander should calibrate their own hand and fingers to determine the width in mils for the various combinations of finger and hand positions shown, and then memorize those numbers. Calibrate hand measurements by comparing measurements taken with the hand and measurements taken with a more accurate measuring device.

8-50. When using hand and fingers in measuring angular deviation, the tank commander fully extends the arm (elbow locked) so that the hand and fingers are always the same distance from the eyes. The tank commander always points the palm of the hand toward the target area and holds the fingers as demonstrated in figure 8-4. Anything that changes the method, such as wearing a glove or not keeping the fingers together, affects the measurement.

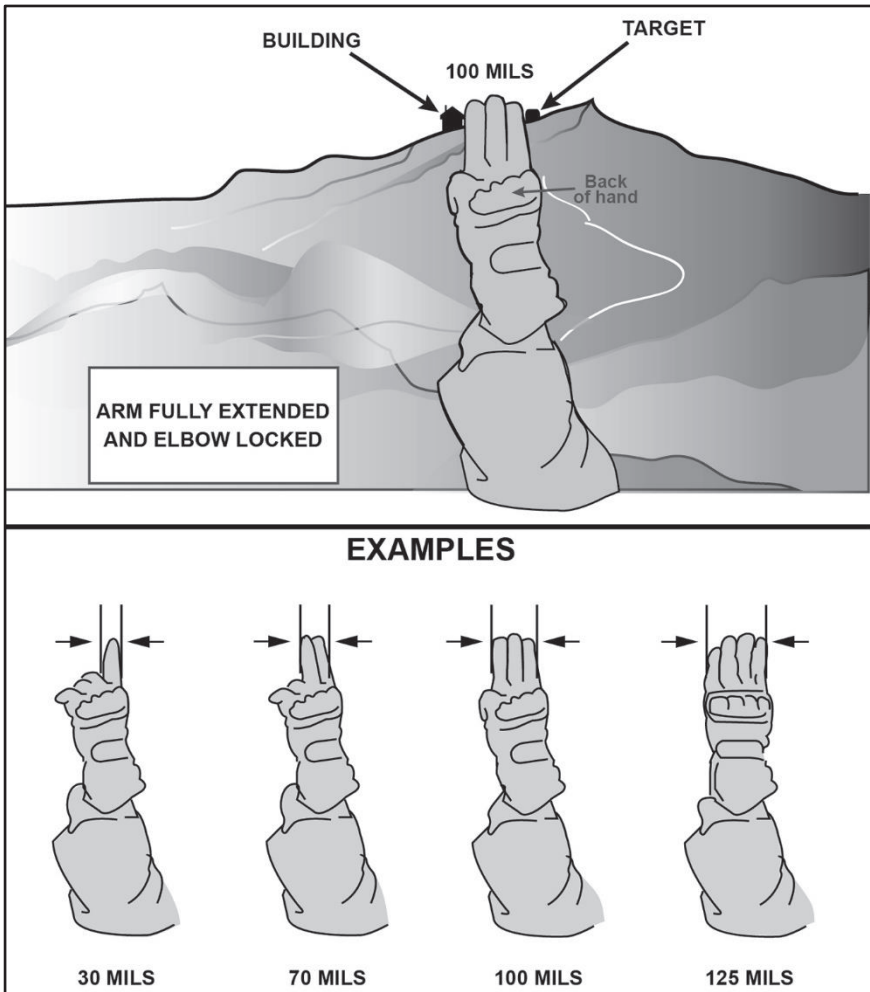


Figure 8-4. Use of hand-and-fingers method to determine deviation

8-51. A burst on the OT line is spotted as ON LINE. Deviation to the left or right should be measured to the nearest 5 mils for area targets, with measurements taken from the center of the burst. Deviation for a destruction mission (precision fire) is estimated to the nearest mil. Figure 8-5 shows the adjusting point at the center of the binoculars' horizontal scale.

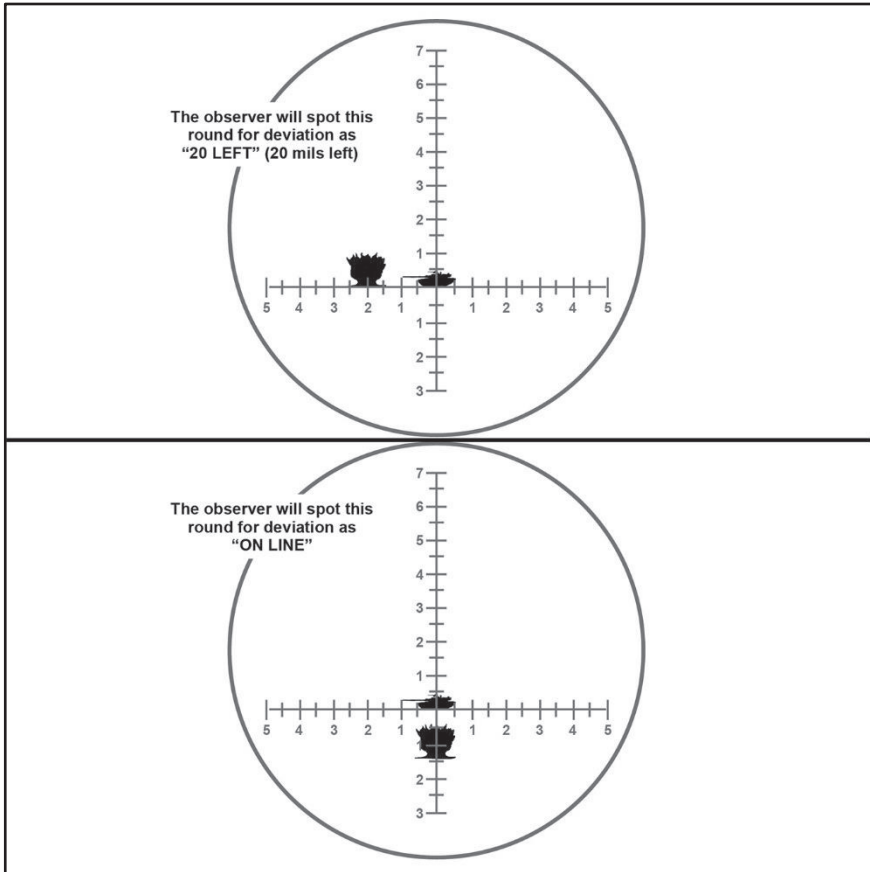


Figure 8-5. Deviation spotting with binoculars

Deviation Correction

8-52. Once the observer determines the observed deviation (in mils), the observer must convert it into a deviation correction (in meters). Deviation correction is the distance in meters the burst must be moved to be on line between observer and target. It is sent, with the range correction, to the FDC for the next adjusting round or when calling for fire for effect.

8-53. The first step in determining deviation correction is to calculate the OT factor, the distance from the observer to the target in kilometers. The observer calculates the distance to the target in meters and divides by 1,000; see table 8-3 for examples of this process. The precise correction is determined by multiplying the observed deviation by the OT factor; it is expressed to the nearest 10 meters (see figure 8-6).

Table 8-3. Determining the observer-target factor

<i>Guide for Determining the OT (observer-target) Factor</i>
OT distance greater than 1,000 meters. Round to the nearest thousand, and express in thousands of meters.
<p>EXAMPLES: OT distance, 4,200 meters – OT factor, 4.0</p> <p>OT distance, 2,700 meters – OT factor, 3.0</p>
OT distance less than 1,000 meters. Round to the nearest 100 meters and express in thousands of meters.
<p>EXAMPLES: OT distance, 800 meters – OT factor, 0.8</p>

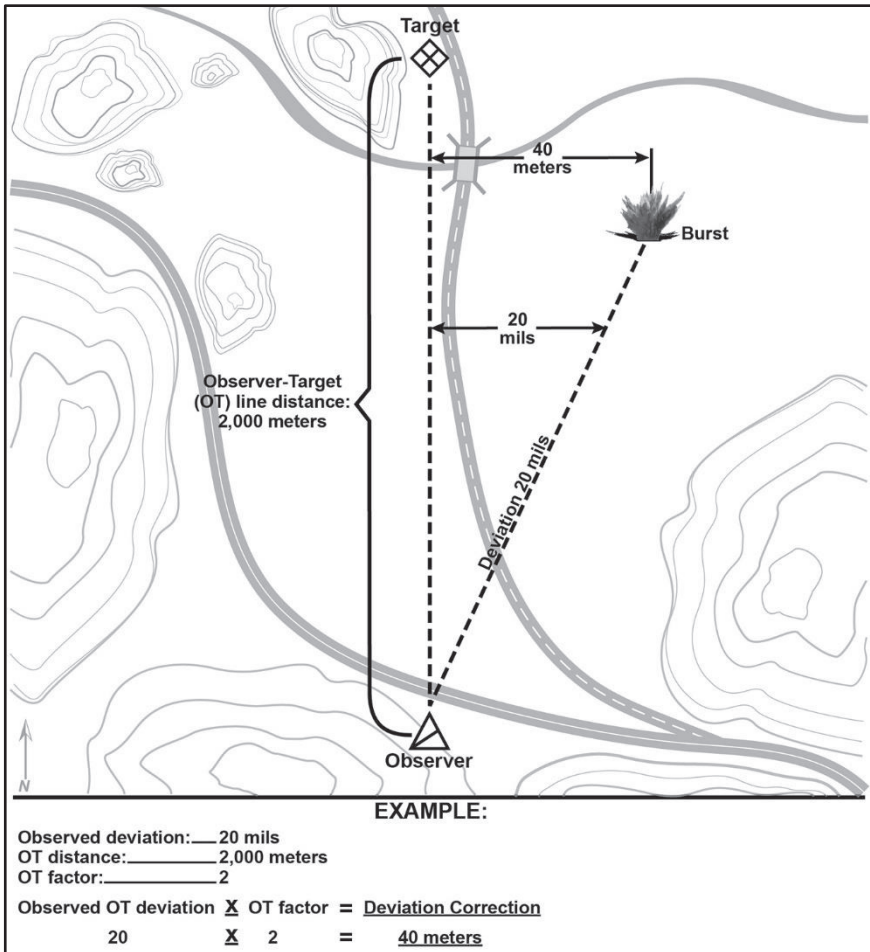


Figure 8-6. Converting mil deviation to deviation correction

8-54. The observer's goal in making the correction is to move the adjusting rounds close enough to the OT line so that range spotting can be made accurately. Minor deviation corrections (10 to 20 meters) are necessary in adjustment of precision fire. In adjustment of area fire, however, small deviation corrections (20 meters or less) should be ignored except when such a small change is necessary to determine a definite range spotting.

Range Spotting

8-55. Range spotting is the second type of adjustment required to get fire on the target (see figure 8-7). Any range spotting other than DOUBTFUL, LOST, or UNOBSERVED, is definite. Usually, an adjusting round's burst that is on or near the OT line will give a definite range spotting. However, even experienced observers use caution and good judgements when range spotting.

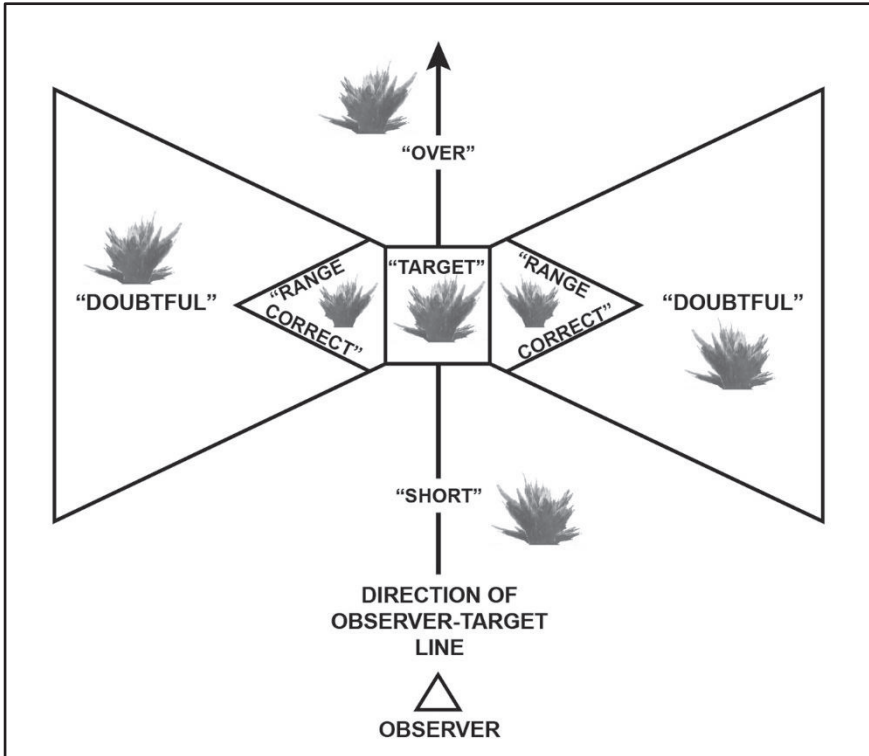


Figure 8-7. Range spotting

8-56. The observer can sometimes make a definite range spotting even when the burst is not on or near the OT line. The observer uses personal knowledge of the terrain or wind and observes debris scattered by the explosion. Possible range spottings are:

- OVER - a round that impacts beyond the adjusting point.
- SHORT - a round that impacts between the observer and the adjusting point.
- TARGET - a round that impacts on the target. Use this spotting only in precision fire (registration or destruction missions).
- RANGE CORRECT - a round that impacts at the correct range.
- DOUBTFUL - a round that can be observed but cannot be spotted as OVER, SHORT, TARGET, or RANGE CORRECT.
- LOST - a round whose location cannot be determined by sight or sound.

- UNOBSERVED - a round not observed but known to have impacted (usually heard).
- UNOBSERVED OVER or UNOBSERVED SHORT - a round not observed but known to have impacted over or short.

Range Correction

8-57. The observer gives range corrections so that, with each successive correction, the adjusting round intentionally lands over or short of the adjusting point, closing on the target.

Successive Bracketing

8-58. Successive bracketing is best when observers are inexperienced or when precise adjustment is required, such as precision registrations and destruction missions. It mathematically ensures fire-for-effect rounds are within 50 meters of the target.

8-59. After the first definite range spotting is determined, the observer should send a range correction to the FDC to establish a range bracket of known distance (one round over and one round short). Once the observer establishes the bracket, they successively split the bracket until confident that the rounds will impact within 50 meters of the adjusting point when requesting fires for effect. Normally, range changes of 100, 200, 400, or 800 meters make splitting the bracket easier. The observer enters fire for effect when the rounds impact within 50 meters of the adjusting point. (See figure 8-8.)

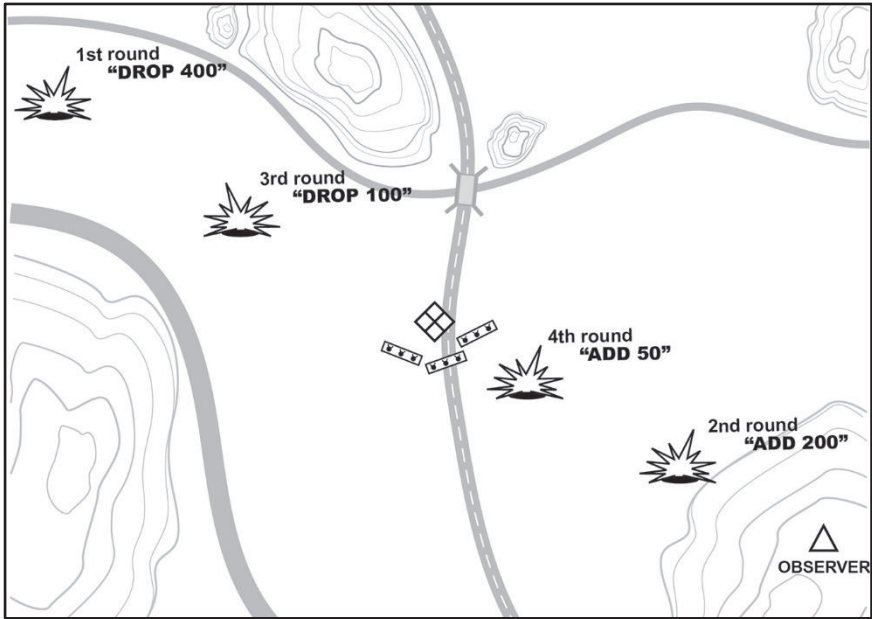


Figure 8-8. Successive bracketing

Hasty Bracketing

8-60. Hasty bracketing is best when responsive fires are required and the observer is experienced in the adjustment of fire.

8-61. Experience has shown that effectiveness on the target decreases as the number of rounds used in adjustment increases. An alternative to successive bracketing is hasty bracketing. While successive bracketing mathematically ensures that the fire-for-effect rounds will strike within 50 meters of the adjusting point, it is a relatively slow and unresponsive technique. Therefore, if the nature of the target dictates that effective fires are needed faster than successive bracketing can provide them, hasty bracketing should be used.

8-62. The observer gets a bracket on the first correction much as in the successive bracketing technique. The observer uses this initial bracket as a yardstick to determine the subsequent correction. The observer sends the FDC the correction to move the rounds to the target and FIRE FOR EFFECT (see figure 8-9).

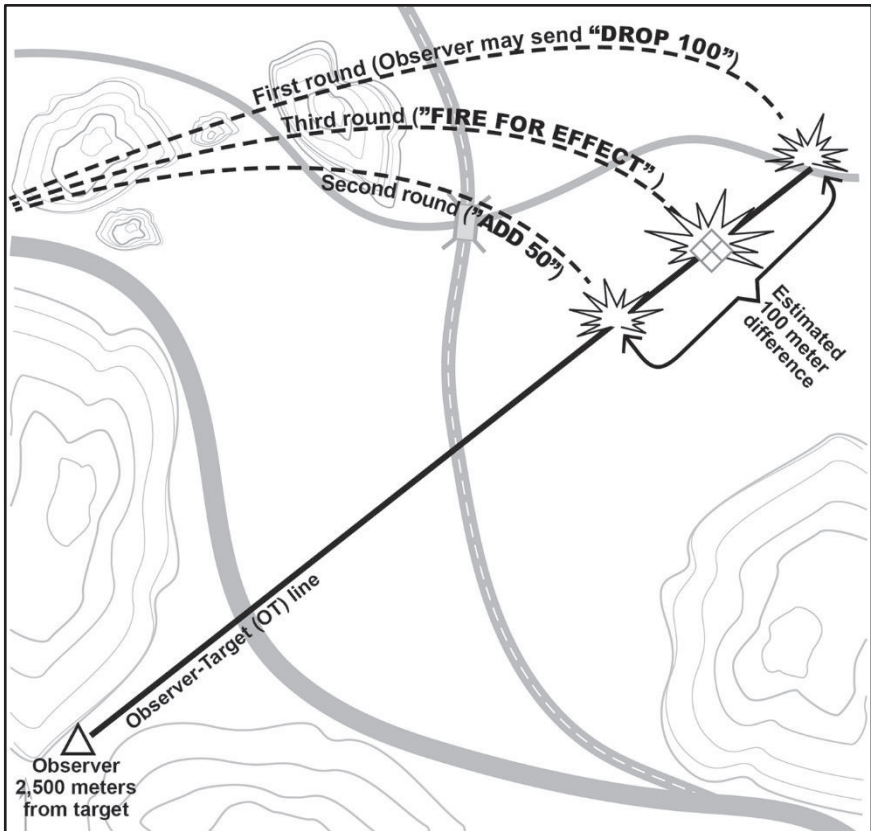


Figure 8-9. Hasty bracketing

Creeping (DANGER CLOSE)

8-63. The creeping method of adjustment is used in DANGER CLOSE situations. The initial round is fired beyond the target. Adjusting rounds are moved closer to the target, 50 meters or less at a time, until the target is engaged (see figure 8-10). This method is slow and tends to use more ammunition than other adjustments; therefore, it should be used only when Service member safety is a major concern.

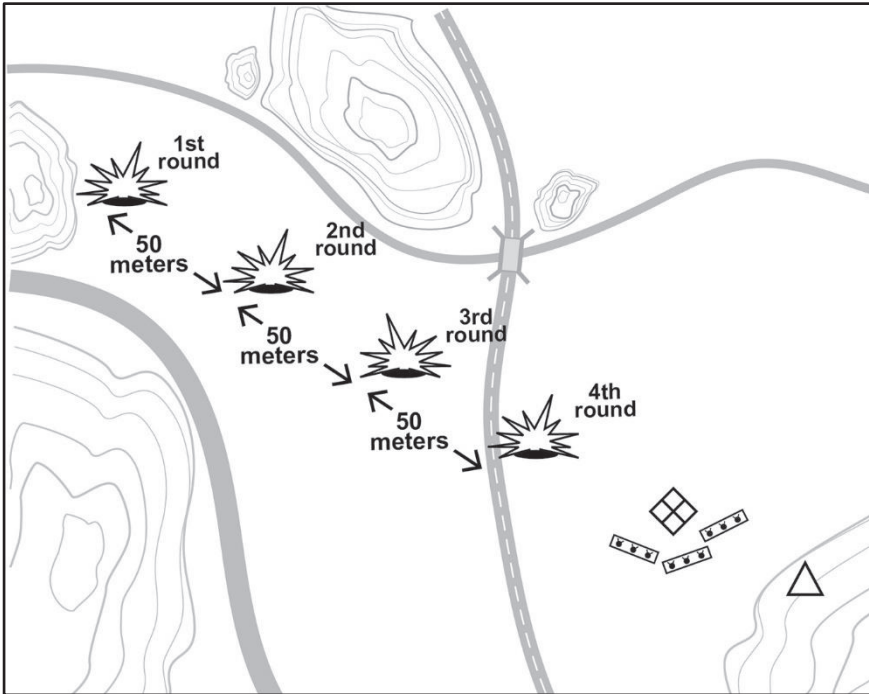


Figure 8-10. Creeping method of adjustment

Refinement and Surveillance

8-64. The observer notes the results of the fire for effect. Table 8-4 illustrates various alternatives available to the observer after fire-for-effect rounds have been fired.

Table 8-4. Results and observer actions

RESULTS OF FIRE FOR EFFECT	OBSERVER'S ACTIONS (RADIO TRANSMISSION IN PARENTHESES)
Accurate and sufficient	End of mission , surveillance (END OF MISSION, RPG SILENCED, OVER)
Accurate, sufficient, target replot desired	Request replot, end of mission, surveillance (RECORD AS TARGET, END OF MISSION, BMP NEUTRALIZED, OVER)
Inaccurate and sufficient	Refinement, end of mission, surveillance (RIGHT 20, ADD 20, END OF MISSION, RPG SILENCED, OVER)
Inaccurate, sufficient, target replot desired	Refinement, request replot, end of mission, surveillance (RIGHT 10, RECORD AS TARGET, END OF MISSION, BMP NEUTRALIZED, OVER)
Inaccurate and insufficient	Refinement, repeat and reenter, adjust fire (RIGHT 10, ADD 50, REPEAT, or RIGHT 10, ADD 100, ADJUST FIRE, OVER)
Accurate and insufficient	Repeat (REPEAT, OVER)

TANK PLATOON FIRE SUPPORT PLANNING

8-65. The company commander and FIST plan indirect fires; however, the platoon leader/*platoon commander* may plan and request more targets if needed.

8-66. After receiving the company offensive fire plan, the platoon leader/*platoon commander* checks it to ensure that targets are planned on all known or suspected enemy positions. The platoon's defensive fire plan should list planned targets in front of, on, behind, and to the flanks of BPs. The likely areas for these targets include observed choke points, avenues of approach, obstacles, and likely enemy support-by-fire positions. If more targets are necessary for either the offensive or defensive plan, the platoon leader/*platoon commander* coordinates them with the commander and the FIST.

SECTION II – COMBAT ENGINEERS

8-67. Brigade/regiment and battalion/squadron commanders decide how best to employ their engineer assets, whether as a distinct unit, attached to their subordinate elements, or in direct support of the subordinate elements. In fast-moving offensive operations, one technique is to place engineers under operational control to the lead company team

to support breaching operations. In the defense, commanders generally keep engineer units intact to construct major obstacles and execute survivability operations, designating the priority of work to be accomplished. Engineers are trained to fight as Infantry as a secondary mission; however, they are employed as Infantry only if absolutely necessary.

CAPABILITIES

8-68. The brigade engineer battalion in the armored brigade combat team (ABCT) has two separate, unique, combat engineer companies that can provide support to the tank platoon. The companies are organized, trained, and equipped to conduct mobility, countermobility, and survivability missions to support ground operations. The higher unit commander determines the engineers' specific tasks and responsibilities in these three roles.

ORGANIZATION AND EQUIPMENT

8-69. Of the two combat engineer companies in the engineer battalion, the first is comprised of two combat engineer platoons and one engineer support platoon.

8-70. The combat engineer platoon includes three mounted combat engineer squads. Each squad has a demolition set, various tool kit sets (urban, carpenters, pioneer), and handheld mine detectors.

8-71. The engineer support platoon includes a breach squad and horizontal construction squad. The breach squad provides the tank platoon the ability to reduce mine and wire obstacles, or cross gaps of limited size, depending on the specific bridging asset. The horizontal construction squad can help the tank platoon with digging vehicle fighting positions or emplacing countermobility obstacles.

8-72. The second combat engineer company is similar in equipment organization to the first company; however, this company has an additional platoon designed for route clearance. This additional platoon consist of two squads, equipped with mine protected clearance vehicles and vehicle mounted mine detection systems.

Note. See ATP 3-90.4/MCWP 3-17.8 for more information on these additional types of equipment.

OPERATIONAL CONSIDERATIONS

8-73. In mobility operations, the engineer platoon can provide the following support:

- Obstacle reduction. The engineers can reduce or negate the effects of obstacles, thereby improving their supported unit's maneuver capability.
- Route clearance/construction. The engineers can clear, construct, improve, and maintain roads, bridges, and fords.

8-74. In a countermobility role, engineers can help with obstacle construction to obstruct the enemy's scheme of maneuver. They can reinforce terrain and existing obstacles to disrupt, fix, turn, or block the enemy force.

8-75. Engineers can improve survivability by constructing dug-in positions and overhead protection to reduce the effectiveness of enemy weapons (see chapter 4).

ENGINEER SUPPORT TO THE TANK PLATOON

8-76. Combat engineers normally support the company team as a platoon under the direction of the company team commander. During planning for mobility, countermobility, and survivability work, the engineers can advise the commander on construction time and materials needed; the company normally must order much of the material through battalion supply channels.

8-77. The tank platoon leader/*platoon commander* will frequently be tasked to provide security while the engineer platoon conducts its missions. To accelerate the construction process, the engineers may need the help of Armor crewmen (see chapter 7).

SECTION III – AIR GROUND OPERATIONS

8-78. Army aviation units normally are not under operational control to echelons below battalion level; however, attack reconnaissance helicopters may conduct direct air-to-ground coordination with companies and platoons during combat operations. Air ground operations are imperative for conducting operations successfully and units continually train to minimize potential for fratricide and civilian casualties.

8-79. Attack reconnaissance helicopter companies are maneuver units and are normally integrated into the ground scheme of maneuver. When working with ground maneuver units, the attack reconnaissance helicopter unit may be placed under operational control to the ground force, and consist of variety of attack reconnaissance helicopters including the AH-64D/E. Attack reconnaissance helicopters can also help with reconnaissance and security operations. Attack helicopters have multiple sensors, including voice and digital communication capabilities, used to collect and process multiple types of information.

8-80. When the tank platoon is in close contact with enemy forces, the ground maneuver commander controls the synchronization and integration of aviation maneuver, and the distribution and deconfliction of aviation fires. Air ground reconnaissance requires detailed planning.

8-81. The AH-64 helicopter is primarily employed as an attack aircraft specifically designed as a highly stable, aerial weapons-delivery platform. It excels in antiarmor roles. The AH-64 can fight to destroy, reduce by attrition, disrupt, or delay enemy forces. (Refer to ATP 3-04.1 for more information.)

ARMY ATTACK AVIATION

8-82. Army attack aviation targets are planned on probable locations of enemy attack along the march route. Army attack aviation call for fire is a coordinated attack by Army attack aircraft against enemy forces in close proximity to march units. Army attack aviation call for fire (see figure 8-11) is not synonymous with close air support flown by joint and multinational aircraft. Terminal control from ground units or controllers is not required due to aircraft capabilities and enhanced situational understanding of the aircrew. Depending on the enemy situation, Army attack aviation can be on station during times when contact is most likely to occur. Air-ground integration ensures frequencies are known and markings are standardized to prevent fratricide. (Refer to ATP 3-04.1 for additional information).

FORMAT 12. Attack Aviation Call For Fire Brief Format (5-Line)	
1. Observer / Warning Order	“ _____, this is _____, Fire Mission, Over” (Aircraft Call Sign) (Observer Call Sign)
2. Friendly Location / Mark	“My position _____, marked by _____” (TRP, Grid, etc.) (Strobe, Beacon, IR Strobe, etc.)
3. Target Location	“Target Location _____” (Bearing [magnetic] and Range [meters], TRP, Grid, etc.)
4. Target Description / Mark	“ _____, marked by _____” (Target Description) (IR Pointer, Tracer, etc.)
5. Remarks	_____ (Threats, Danger Close Clearance, Restriction, At My Command, etc.)
“Over”	
AS REQUIRED:	
1. Clearance: Transmission of the 5-Line CFF Brief is clearance to fire (unless danger close). For closer fire, the observer/commander must accept responsibility for increased risk. State “Cleared Danger Close” in line 5. This clearance may be preplanned.	
2. At My Command: For positive control of the aircraft, state “At My Command” on line 5. The aircraft will call “Ready for Fire” when ready.	
Legend:	
etc.= et cetera TRP= Target Reference Point IR= Infrared	

Figure 8-11. Attack aviation call for fire brief format

8-83. Attack aviation aircrews use a standardized check-in brief to contact the supported ground unit. The check-in brief provides the ground unit with the key and essential

information such as aircraft team composition and location, munitions available, night vision capability, and on station time.

CLOSE AIR SUPPORT

8-84. Close air support, provided by the U.S. Air Force, U.S. Navy, and Marine Corps, can be employed to destroy large enemy armor formations, or when using smart weapons, can be effective against point targets. Close air support strikes can be either preplanned (at brigade, battalion, or squadron level) or requested on an immediate-need basis through the battalion joint terminal attack controller via the joint air request net. The joint terminal attack controller on the ground or the forward air controller (airborne) acts as a link between the ground element and the close air support aircraft (see table 8-5 on page 8-30).

Table 8-5. Close Air Support

AIRCRAFT	SERVICE	CHARACTERISTICS (Typical Munitions)
AV-8B	U.S. Marine Corps (USMC)	Vertical short takeoff and landing aircraft; subsonic; typical load 4,000 pounds. Maximum load 9,200 pounds; 25-millimeter Gatling gun.
A-10 or O/A-10	U.S. Air Force (USAF)	Specialized close air support (CAS) aircraft subsonic; typical load 6,000 pounds. Maximum load 16,000 pounds; 30-millimeter gun.
F-15E	USAF	Multi-role aircraft; priority is air-to-ground; supersonic; maximum load 24,500 pounds; 20-millimeter cannon with 512 rounds.
F-16	USAF	Multi-role aircraft; complements the F-15 in air-to-air role; most accurate air-to-ground delivery system in the inventory; supersonic; typical load 6,000 pounds. Maximum load 10,500 pounds.
F/A-18	U.S. Navy (USN), USMC	Multi-role fighter; wide variety of air-to-surface weapons; typical load 7,000 pounds. Maximum load 17,000 pounds; 20-millimeter gun mounted in the nose and air-to-air missiles.
AC-130	USAF	Specialized CAS/rear area combat operations (RACO) aircraft, propeller driven, two models. The A-model is equipped with two 40-millimeter guns, two 7.62-millimeter mini guns. The H-model is similar, except it has no 7.62 mini guns and one of the 40-millimeter guns is replaced with a 105-millimeter howitzer. Both models have advanced sensors and a target acquisition system including forward-looking infrared and low-light television. Weapons employment accuracy is outstanding. This aircraft is vulnerable to threat air defense systems and must operate in a low air defense artillery threat environment.
<p>Note. Typical load is average load for typical support mission; maximum load is the amount the aircraft can carry in an ideal situation. Ammunition load is for information purposes only, as the platoon has no control of aircraft configurations. This helps platoon leaders/<i>platoon commanders</i> understand which aircraft would best be able to support the platoon for a certain type of mission.</p>		

8-85. Whenever possible, friendly positions should be marked during close air strikes, especially when friendly personnel are within 300 meters of the target.

8-86. Resources for marking positions include the following:

- Smoke. The smoke grenade is a commonly used marker, but has limitations. Wind may cause smoke to drift above trees, and some colors can blend with the background. Violet or white smoke shows up well against most background colors (in daytime only).
- Flares. Rocket or 40-mm flares are useful for attracting attention at night; they can sometimes be employed effectively during the day.

- Mirrors and signal panels. Signal mirrors are effective ground-to-air devices for attracting attention of aircraft. If the sun is shining and the operator is skillful, pilots can see a mirror's flash miles away. Other good visual references for pilots are VS-17 signal panels.
- Lights. Pocket-sized, battery-powered strobe lights produce brilliant white or blue flashes at about one and a half second intervals. The flash is visible at night for one to three miles. Vehicle lights, such as an unshielded red taillight, are visible to a pilot for several miles at night. Chemical glow lights can also be used to mark friendly positions if the enemy threat is low and they do not possess night vision equipment. One technique that can be used at night is to tie an infrared or green chemical light on a 10-foot string. When aircraft are in the area, a crewman can swing the light in a circular motion to mark the location. Referred to as a "buzz saw," this technique is effective, but the user must take into consideration the enemy threat in the area.

SECTION IV – UNMANNED AIRCRAFT SYSTEMS

8-87. UAS are a combat multiplier that provides the ability to decisively influence current and future operations when employed for tactical reconnaissance, surveillance, threat identification, terminal guidance support to precision-guided munitions, and battle damage assessment. Capabilities of UASs are maximized when employed as part of an integrated and synchronized effort.

UNMANNED AIRCRAFT SYSTEMS GROUPS

8-88. UAS are grouped based on the physical and performance characteristics of weight, operating altitude, and airspeed. The groups are determined without regard for payload, mission, command relationship, or service. A UAS possessing one attribute of the next higher group is placed in that group. The U.S. Joint Force categorizes UAS into five groups as outlined in the table 8-6.

Table 8-6. Category of Unmanned Aircraft Systems

<i>UA Category</i>	<i>Maximum Gross Takeoff Weight (lbs)</i>	<i>Normal Operating Altitude (ft)</i>	<i>Airspeed (KIAS)</i>	<i>Representative UA</i>
Group 1	0-20	<1,200 AGL	<100	Raven Wasp Puma
Group 2	21-55	<3,500 AGL	<250	Scan Eagle
Group 3	56 < 1,320	<18,000 MSL		Shadow
Group 4	>1,320		<18,000 MSL	Any airspeed
Group 5		>18,000 MSL	Global Hawk Reaper Triton	
<p>Legend:</p> <p>AGL – above ground level kts – knots UA – unmanned aircraft</p> <p>ft - feet lbs - pounds < - less than</p> <p>KIAS – knots indicated MSL – mean sea level > - greater than</p> <p>airspeed</p> <p>Note: Groups 1, 2, and 3 are sometimes referred to as low, slow, or small unmanned aircraft systems.</p>				

8-89. Operations of UAS at battalion and below are characterized by close-range (less than 25 kilometers), short-duration missions (one to two hours) (group one) generally operating below the coordinating altitude and thoroughly integrated with ground forces as an organic asset supporting operations.

UNMANNED AIRCRAFT SYSTEM FUNCTIONS

8-90. The UASs play an integral role in accomplishing the following warfighting functions:

- Mission command/*command and control*. Current systems extend the range of mission command/*command and control* systems. A UAS employed with communication relay packages extend terrestrial mission command nodes.
- Movement and maneuver/*maneuver*. Provides the commander with current battlefield information and the ability to influence actions at the time and place of the commander's choosing.
- Intelligence. The UASs are integrated components of any information collection plan. They are flexible and responsive platforms equipped with a variety of mission payloads to support the commander's intelligence gathering requirements.

Note. The communications infrastructure, the threat, and the operating tempo may affect the ability to employ or emplace systems or sensors to their full potential. Current small UASs are not intelligence systems, but they provide an intelligence capability.

- Fires. Support by UASs includes all aspects of the “decide, detect, deliver, and assess cycle.” A UAS can significantly shorten the sensor-to-shooter response time.
- Protection/*force protection*. The UASs provide the ability to maintain a consistent security presence and quick response to emerging threats during maneuver, convoy operations, and in the vicinity of defensive areas.
- Sustainment/*logistics*. The UASs provide reconnaissance along supply routes and proposed logistics support areas. Future systems may support unmanned resupply and casualty evacuation capability. (Refer to ATP 3-04.64/MCRP 3-42.1A/NTTP 3-55.14/AFTTP 3-2.64 for more information.)

SECTION V – AIR AND MISSILE DEFENSE

8-91. Enemy air forces, which include unmanned aircraft systems, will attempt to attack friendly ground forces and attempt to destroy or disrupt their operations. The tank platoon must be able to employ all available active and passive air defense measures. The platoon can mass the fires of its weapons against any enemy aircraft to provide a significant terminal defense.

PASSIVE AIR DEFENSE

8-92. Passive air and missile defense is the tank platoon's first line of defense against enemy air attack. It includes all measures, other than active defense, taken to minimize the effects of hostile air action.

ATTACK AVOIDANCE

8-93. If an enemy pilot cannot find friendly elements, the enemy pilot cannot attack them. The platoon should use concealment, camouflage, deception, communications security, and any other necessary action to prevent enemy detection.

8-94. The platoon should follow these guidelines to avoid detection or to limit damage:

- When stopped, occupy positions that offer cover and concealment; and camouflage vehicles that are exposed. When moving, use covered and concealed routes.
- Disperse vehicles as much as possible to make detection and attack more difficult.
- Smooth down track marks leading to vehicle positions, and eliminate or cover the spoil from dug-in positions.
- If moving when an enemy aircraft attacks, disperse and seek covered and concealed positions.
- Do not fire on a hostile fixed-wing aircraft unless it is clear that the aircraft has identified friendly elements. Premature engagement compromises friendly positions.
- Designate air guards for every vehicle or position, and establish and maintain 360-degree security.
- Establish an air warning system in the unit SOP, including visual and audible signals.

PASSIVE AIR DEFENSE STEPS

8-95. When the platoon observes fixed-wing aircraft, helicopters, or UASs that could influence its mission, it initially takes passive air defense measures unless the situation requires immediate active measures. Passive air defense involves these three steps:

- Step 1 – Alert the platoon with a contact report.
- Step 2 – Deploy or take the appropriate actions. If the platoon is not in the direct path of an attacking aircraft, the platoon leader/*platoon commander* orders vehicles to seek cover and concealment and halt with at least a 100-meter interval between vehicles. The platoon also may be ordered to continue moving as part of the company.
- Step 3 – Prepare to engage. Vehicle crews prepare to engage the aircraft on order of their platoon leader/*platoon commander*.

ACTIVE AIR AND MISSILE DEFENSE

8-96. Although passive measures are the first line of defense against air attack, the tank platoon must be prepared to engage enemy aircraft. The decision to fight back against an air threat is based on the situation and the capabilities of organic weapon systems. All platoon members must understand that they can defend against a direct attack but cannot engage aircraft that are not attacking them unless the weapons control status (WCS) allows it.

8-97. If the leader determines that the platoon is in the direct path of attacking aircraft, the leader initiates active air defense procedures, including react to air attack drills (See chapter 3 for more on react to air attack drill). Active air defense entails the following steps:

- Step 1 – Initiate fires. The primary intent is to force aircraft to take self-defense measures that alter their attack profile and reduce their effectiveness. Volume is the key to effectiveness; throw up a “wall of steel” through which aircraft must fly.
- Step 2 – Create a nonlinear target. Vehicles move as fast as possible at a 45-degree angle away from the path of flight and toward attacking aircraft. Maintains an interval of at least 100 meters between vehicles, forcing aircraft to make several passes to engage the entire platoon.
- Step 3 – Move quickly to covered and concealed positions and stop. Vehicles freeze their movement for at least 60 seconds after the last flight of aircraft has passed.
- Step 4 – Send a SPOTREP. The platoon updates the commander on the situation as soon as possible.

WEAPONS CONTROL STATUS

8-98. The WCS describes the relative degree of control in effect for air and missile defense fires. It applies to all weapon systems. The platoon leader/*platoon commander* receives the status from the company commander. The three control statuses are the following:

- WEAPONS FREE. Crews can fire at any air target not positively identified as friendly. This is the least restrictive WCS.
- WEAPONS TIGHT. Crews can fire only at air targets positively identified as hostile according to the prevailing hostile criteria.
- WEAPONS HOLD. Crews are prohibited from firing except in self-defense or in response to a formal order from the unit commander. This is the most restrictive control status.

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Appendix A

Direct Fire Planning and Control

Suppressing or destroying the enemy with direct fires is fundamental to success in close combat. Effective direct fires are essential to winning the close fight. The tank platoon leader/*platoon commander* must be able to effectively mass the fires of all available resources at critical points and times to be successful on the battlefield. This appendix discusses the fundamentals, planning, preparation, and execution of direct fire.

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SECTION	I. Principles of Direct Fire Control	A-1
	II. Fire Control Process	A-3
	III. Direct Fire Planning	A-8
	IV. Direct Fire Control	A-10

SECTION I – PRINCIPLES OF DIRECT FIRE CONTROL

A-1. Fire control requires a unit to acquire the enemy and mass the effects of fires rapidly to achieve decisive results in the close fight (see TC 3-20.31-4). When planning and executing direct fires, the platoon leader/*platoon commander* and subordinate leaders must know how to apply several fundamental principles.

DIRECT FIRE PRINCIPLES

A-2. The purpose of the principles of direct fire is not to restrict the actions of subordinates. Applied correctly, they help the platoon to accomplish its primary goal in direct fire engagements to acquire first and shoot first. These principles give subordinates the freedom to act quickly upon acquisition of the enemy. This discussion focuses on the following principles:

- Mass the effects of fire.
- Destroy the greatest threat first.
- Avoid target overkill.

- Employ the best weapon for specific target.
- Minimize friendly exposure and avoid fratricide.
- Plan for limited visibility conditions.
- Develop contingencies.

MASS THE EFFECTS OF FIRE

A-3. Mass the effects of fire. The platoon must mass its fires to achieve decisive results. Massing entails focusing fires at critical points and distributing the effects. Random application of fires is unlikely to have a decisive effect. For example, concentrating the platoon's fires at a single target may ensure its destruction or suppression; however, that fire control COA will probably not achieve a decisive effect on the enemy formation or position.

DESTROY THE GREATEST THREAT FIRST

A-4. The order in which the platoon engages enemy forces is in direct relation to the danger it presents. The threat posed by the enemy depends on the weapons, range, and position. Presented with multiple targets, usually a unit initially concentrates fires to destroy the greatest threat and then distributes fires over the remainder of the enemy force.

AVOID TARGET OVERKILL

A-5. Use only how much fire required to achieve necessary effects. Target overkill wastes ammunition and ties up weapons that are better employed acquiring and engaging other targets. The idea of having every weapon engage a different target, however, must be tempered by the requirement to destroy the greatest threats first.

EMPLOY THE BEST WEAPON FOR SPECIFIC TARGET

A-6. Using the appropriate weapon for the target increases the probability of rapid enemy destruction or suppression; at the same time, it saves ammunition. The platoon has many weapons to engage the enemy. Target type, range, and exposure are key factors in determining the weapon and ammunition that should be employed, as are weapons and ammunition availability and desired target effects. Additionally, leaders should consider individual crew capabilities when deciding on the employment of weapons. The platoon leader/*platoon commander* arrays the forces based on the terrain, enemy, and desired effects of fires.

MINIMIZE FRIENDLY EXPOSURE AND AVOID FRATRICIDE

A-7. Units increase their survivability by exposing themselves to the enemy only to the extent necessary to engage the enemy effectively. Natural or manmade defilade provides the best cover. Crews minimize their exposure by constantly seeking effective available

cover, attempting to engage the enemy from the flank, remaining dispersed, firing from multiple positions, and limiting engagement times.

A-8. The platoon leader/*platoon commander* and subordinate leaders must be proactive in reducing the risk of fratricide, friendly fire, and noncombatant casualties. They have several tools to help them in this effort: identification training for combat vehicles and aircraft, the unit's weapons safety posture, the WCS, recognition markings, and a common operational picture including range cards, AO sketches, and rehearsals. Knowledge and employment of applicable ROE are the primary means of preventing noncombatant casualties.

Note. Leaders must constantly monitor positions of friendly squads because it is difficult to distinguish between friendly and enemy dismounted Service members.

PLAN FOR LIMITED VISIBILITY CONDITIONS

A-9. Limited visibility fire control equipment enables the company team to engage enemy forces at nearly the same ranges that are applicable during the day. Obscurants such as dense fog, heavy smoke, and blowing sand, however, can reduce the capabilities of thermal and infrared equipment. Leaders should therefore develop contingency plans for such extreme limited visibility conditions. Although decreased acquisition capabilities have minimal effect on area fire, point target engagements likely occur at decreased ranges. Typically, firing positions, whether offensive or defensive, must be adjusted closer to the area or point where the commander intends to focus fires. Another alternative is the use of visual or infrared illumination when there is insufficient ambient light for passive light intensification devices.

DEVELOP CONTINGENCIES

A-10. Leaders initially develop plans based on their units' maximum capabilities; they make backup plans for implementation in the event of casualties or weapon damage or failure. While leaders cannot anticipate or plan for every situation, they should develop plans for what they view as the most probable occurrences. Building redundancy into these plans, such as having two systems observe the same sector, is an invaluable asset when the situation (and the number of available systems) permits. Designating alternate sectors of fire provides a means of shifting fires if adjacent elements are knocked out of action.

SECTION II – FIRE CONTROL PROCESS

A-11. To bring direct fires against an enemy force, leaders must continuously apply the steps of the fire control process. At the heart of this process are two critical actions: rapid, accurate target acquisition and massing of fire to achieve decisive effects on the target. Target acquisition is the detection, identification, and location of a target in

sufficient detail to permit the employment of weapons. Massing entails focusing fires at critical points and distributing the fires for optimum effect.

A-12. The following discussion examines target acquisition and massing of fires using these basic steps of the fire control process:

- Identify probable enemy locations and determine the enemy scheme of maneuver.
- Determine where and how to mass fires.
- Orient forces to speed target acquisition.
- Shift fires to refocus or redistribute.

IDENTIFY PROBABLE ENEMY LOCATIONS AND DETERMINE THE ENEMY SCHEME OF MANEUVER

A-13. Leaders plan and execute direct fires based on their mission analysis. An essential part of this plan is the analysis of the terrain and enemy force, which aids the leader in visualizing how the enemy will attack or defend a particular piece of terrain. A defending enemy's defensive positions or an attacking enemy's support positions are normally driven by intervisibility. Typically, there are limited points on a piece of terrain providing good fields of fire and adequate cover for a defender. Similarly, an attacking enemy will have only a limited selection of avenues of approach providing adequate cover and concealment.

A-14. Coupled with available intelligence, an understanding of the effects of a specific piece of terrain on maneuver, figure A-1 helps the leader in identifying probable enemy locations and likely avenues of approach before and during the fight. The leader may use all of the following products or techniques in developing and updating the analysis:

- An enemy situation template based on the analysis of terrain and enemy.
- A spot or contact report on enemy locations and activities.
- Information collection in the AO.

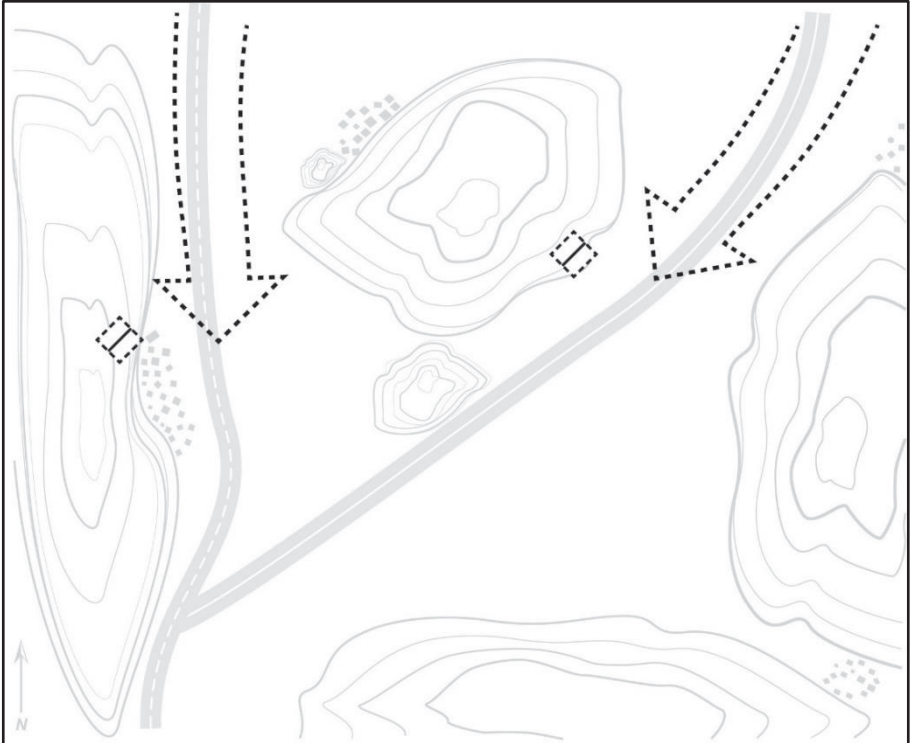


Figure A-1. Identify probable enemy locations and determine the enemy scheme of maneuver

DETERMINE WHERE AND HOW TO MASS FIRES

A-15. To achieve decisive effects, friendly forces must mass their fires (see figure A-2). Massing requires the leader to focus the fires of subordinate elements and to distribute the effects of the fires. Based on the mission analysis and the concept of the operation, the leader identifies points where the leader wants to, or must, focus the unit's fires. Most often, these are locations the leader has identified as probable enemy positions or points along likely avenues of approach where the unit can mass fires. The leader may issue a fire command to focus the fires because subordinate elements may not initially be oriented on the point where the leader wants to mass fires. At the same time, the leader must use direct fire control measures to distribute the fires of the elements, which now are focused on the same point.

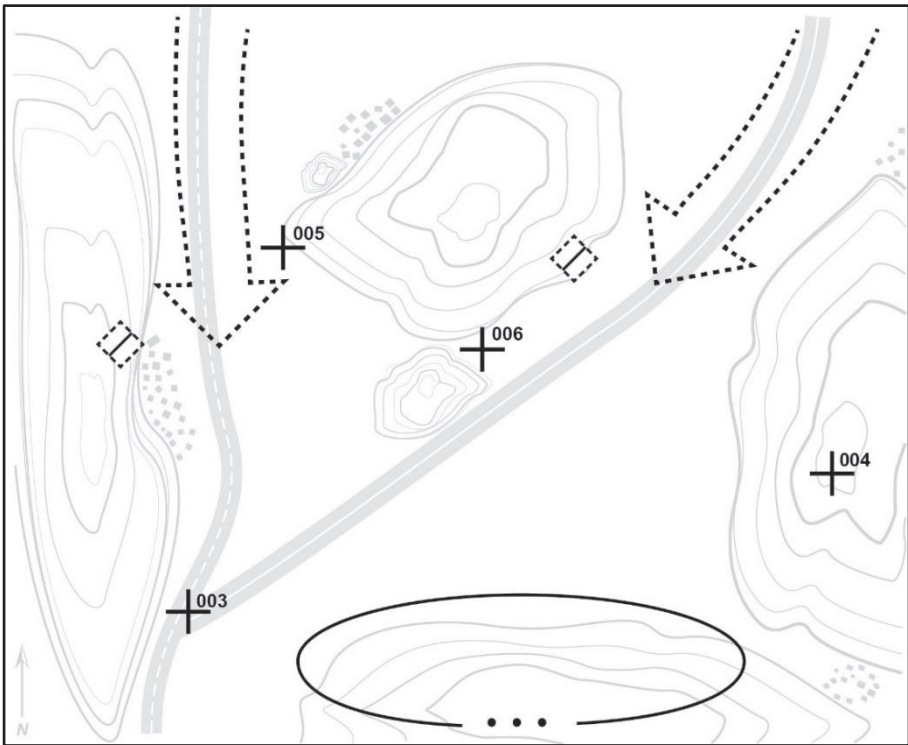


Figure A-2. Determine where and how to mass fires

ORIENT FORCES TO SPEED TARGET ACQUISITION

A-16. To engage the enemy with direct fires, friendly forces must rapidly and accurately acquire enemy elements (see figure A-3). Orienting friendly forces on probable enemy locations and on likely avenues of approach will speed target acquisition. Conversely, failure to orient subordinate elements results in slower acquisition; this greatly increases the likelihood enemy forces are able to engage first. The clock direction orientation method, which is prescribed in most unit SOPs, is good for achieving all-around security; however, it does not ensure friendly forces are best oriented to detect the enemy. To achieve this critical orientation, the leader typically designates TRP or on or near probable enemy locations and avenues of approach; the leader orients the subordinate elements using directions of fire or sectors of fire. Normally, the gunners on crew-served weapons scan the designated direction, sector, or area while other crewmembers observe alternate sectors or areas to provide all-around security.

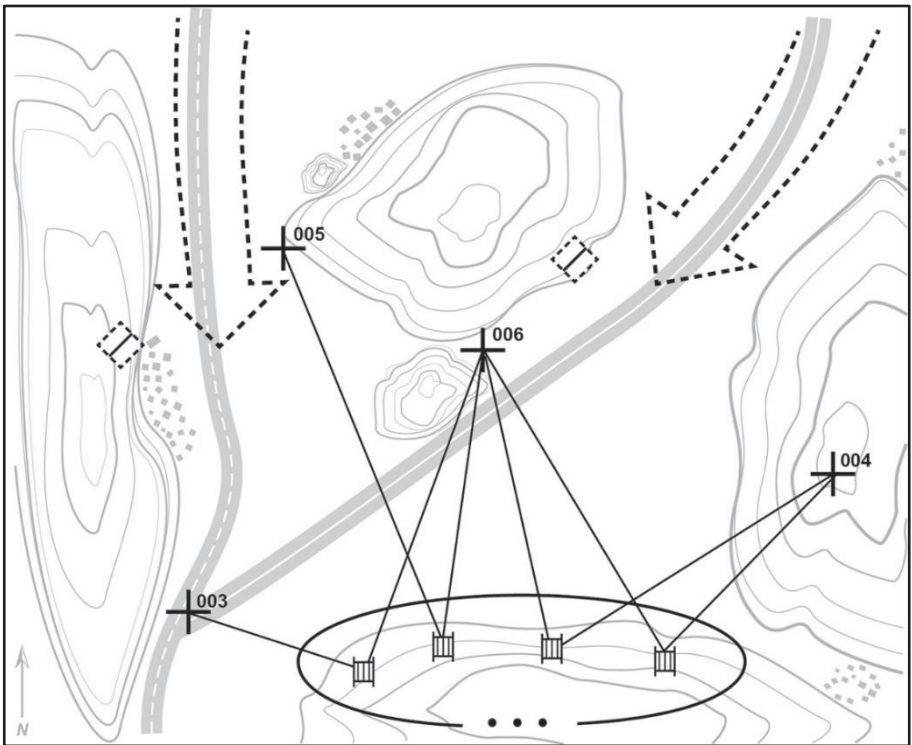


Figure A-3. Orienting forces to speed target acquisition

SHIFT FIRES TO REFOCUS AND REDISTRIBUTE

A-17. As the engagement proceeds, leaders must shift fires to refocus and redistribute the effects based on their evolving mission analysis. Situational awareness becomes an essential part of the fire control process at this point. Leaders apply the same techniques

and considerations, including fire control measures they used earlier to focus and distribute fires. A variety of situations will dictate shifting of fires, including the following:

- Appearance of an enemy force posing a greater threat than the one currently being engaged.
- Extensive attrition of the enemy force being engaged, creating the possibility of target overkill.
- Attrition of friendly elements engaging the enemy force.
- Change in the ammunition status of the friendly elements engaging the enemy force.
- Maneuver of enemy or friendly forces resulting in terrain masking.
- Increased fratricide and friendly fire risk as a maneuvering friendly element closes with the enemy force being engaged.

SECTION III – DIRECT FIRE PLANNING

A-18. The platoon leader/*platoon commander* plans direct fires as part of TLP. Determining where and how the platoon can and will mass fires is an essential step as the platoon leader/*platoon commander* develops the concept of the operation.

LEADER PLANNING

A-19. Leaders plan direct fires to be able to distribute and control their fire. Determining where and how leaders can mass fires is an essential step in this process.

A-20. Based on where and how they want to focus and distribute fires, leaders can establish the weapons ready postures (see paragraph A-57 on page A-19) of their elements as well as triggers for initiating fires. During mission preparation, leaders plan and conduct rehearsals of direct fires (and of the fire control process) based on METT-TC.

A-21. The platoon leader/*platoon commander* plans direct fires in conjunction with development of the mission analysis and completion of the plan. Determining where and how the platoon can and will mass fires are also essential steps as the platoon leader/*platoon commander* develops the concept of the operation.

A-22. After identifying probable enemy locations, the platoon leader/*platoon commander* determines points or areas where to focus combat power. The visualization of where and how the enemy will attack or defend helps the platoon leader/*platoon commander* in determining the volume of fires that must focus at particular points to have a decisive effect. In addition, if the platoon leader/*platoon commander* intends to mass the fires of more than one subordinate element, the platoon leader/*platoon commander* must establish the means for distributing fires.

A-23. Based on where and how they want to focus and distribute fires, the platoon leader/*platoon commander* and subordinate leaders can then establish the weapons ready postures for platoon elements as well as triggers for initiating fires. Additionally, they

must evaluate the risk of fratricide, friendly fire and establish controls to prevent it; these measures include the designation of recognition markings, WCS, and weapons safety posture.

A-24. After determining where and how they will mass and distribute fires, the platoon leader/*platoon commander* and subordinate leaders then must orient elements so they can rapidly and accurately acquire the enemy. They also can war-game the selected COA or concept of the operation to determine probable requirements for refocusing and redistributing fires and to establish other required controls. During mission preparation, the platoon leader/*platoon commander* plans and conducts rehearsals of direct fires (and of the fire control process) based on the mission analysis.

A-25. The platoon leader/*platoon commander* and the subordinate leaders must continue to apply planning procedures and considerations throughout execution. They must be able to adjust direct fires based on a continuously updated mission analysis, combining situational awareness with the latest available intelligence. When necessary, they also must apply direct fire SOPs, which are covered in the following discussion.

STANDARD OPERATING PROCEDURES

A-26. A well-rehearsed direct fire SOP ensures quick, predictable actions by all members of the platoon. The platoon leader/*platoon commander* bases the various elements of the SOP on the capabilities of the force and on anticipated conditions and situations. SOP elements should include standing means for focusing fires, distributing their effects, orienting forces, and preventing fratricide and friendly fire. The platoon leader/*platoon commander* should adjust the direct fire SOP whenever changes to anticipated and actual METT-TC become apparent.

A-27. If the platoon leader/*platoon commander* does not issue other instructions, the platoon begins the engagement using the SOP. Subsequently, the platoon leader/*platoon commander* can use a fire command to refocus or redistribute fires. Paragraphs A-28 through A-32 on page A-10 discuss specific SOP provisions for focusing fires, distributing fires, orienting forces, and preventing fratricide and friendly fire.

FOCUSING FIRES

A-28. TRP are a common means of focusing fires. One technique is to establish a standard respective position for TRP in relation to friendly elements and to consistently number the TRP, such as from left to right. This allows leaders to quickly determine and communicate the location of the TRP.

DISTRIBUTING FIRES

A-29. Two useful means of distributing fires are engagement priorities and target array. One technique is to assign an engagement priority, by type of enemy vehicle or weapon, for each type of friendly weapons system. The target array technique can help in distribution by assigning specific friendly elements to engage enemy elements of approximately similar capabilities.

ORIENTING FORCES

A-30. A standard means of orienting friendly forces is to assign a principal direction of fire, using a TRP, to orient each element on a probable enemy position or likely avenue of approach. To provide all-around security, the SOP can supplement the principal direction of fire with sectors using a friendly-based quadrant. (See paragraph A-43 on page A-14).

AVOIDING FRATRICIDE AND FRIENDLY FIRE

A-31. A primary means of minimizing fratricide and friendly fire risk is to establish a standing WCS of WEAPONS TIGHT, which requires positive enemy identification before engagement. The SOP also must dictate ways of identifying friendly Infantry squads and other dismounted elements; techniques include using arm bands, glint tape, or an infrared light source or detonating a smoke grenade of a designated color at the appropriate time. Minimizing the risk of fratricide in the platoon can be accomplished through mission command systems (if equipped); however, this does not supplant the platoon leader's/*platoon commander's* responsibility to plan for fratricide and friendly fire avoidance.

A-32. Finally, the SOP must address the most critical requirement of fratricide and friendly fire prevention maintaining situational awareness. It must direct subordinate leaders to inform the platoon leader/*platoon commander*, adjacent elements, and subordinates whenever a friendly force is moving or preparing to move.

SECTION IV – DIRECT FIRE CONTROL

A-33. The small-unit leader communicates to the subordinates the manner, method, and time to initiate, shift, and mass fires, and when to disengage by using direct fire control measures. The leader should control the unit's fires so the leader can direct the engagement of enemy systems to gain the greatest effect. The leader uses intelligence preparation of the battlefield/*battlespace* and information collection to determine the most advantageous way to use direct fire control measures to mass the effects on the enemy and reduce fratricide and friendly fire from direct fire systems. (Refer to ATP 2-01.3 and FM 3-55 for more information.)

FIRE CONTROL MEASURES

A-34. Fire control measures are the means by which the platoon leader/*platoon commander* or subordinate leaders control fires. Application of these concepts, procedures, and techniques helps the unit in acquiring the enemy, focusing fires on the enemy, distributing the effects of the fires, and preventing fratricide and friendly fire. At the same time, no single measure is sufficient to control fires. At the platoon level, fire control measures are effective only if the entire unit has a common understanding of what they mean and how to employ them. The following discussion focuses on the various fire control measures employed by the platoon.

TERRAIN-BASED FIRE CONTROL MEASURES

A-35. Leaders use terrain-based fire control measures to focus and control fires on a particular point, line, or area rather than on a specific enemy element. Paragraphs A-36 through A-47 on pages A-11 through A-16 describe the TTP associated with this type of control measure.

Target Reference Point

A-36. A TRP is a recognizable point on the ground leaders use to orient friendly forces, and to focus and control direct fires. In addition, when leaders designate TRP as indirect fire targets, they can use the TRP when calling for and adjusting indirect fires. Leaders designate TRP at probable enemy locations and along likely avenues of approach. These points can be natural or manmade. A TRP can be an established site. For example, a hill or a building, or an impromptu feature such as a burning enemy vehicle or obscurants generated by an artillery round can be designated as a TRP. Friendly units also can construct markers to serve as TRP (see figure A-4 on page A-12). Ideally, TRP should be visible in three observation modes (unaided, passive-infrared, and thermal) so all forces can see them. Examples of TRP include the following features and objects:

- Prominent hill mass.
- Distinctive building.
- Observable enemy position.
- Destroyed vehicle.
- Ground-burst illumination.
- Obscurants round for immediate engagements only; this is the least preferred method.

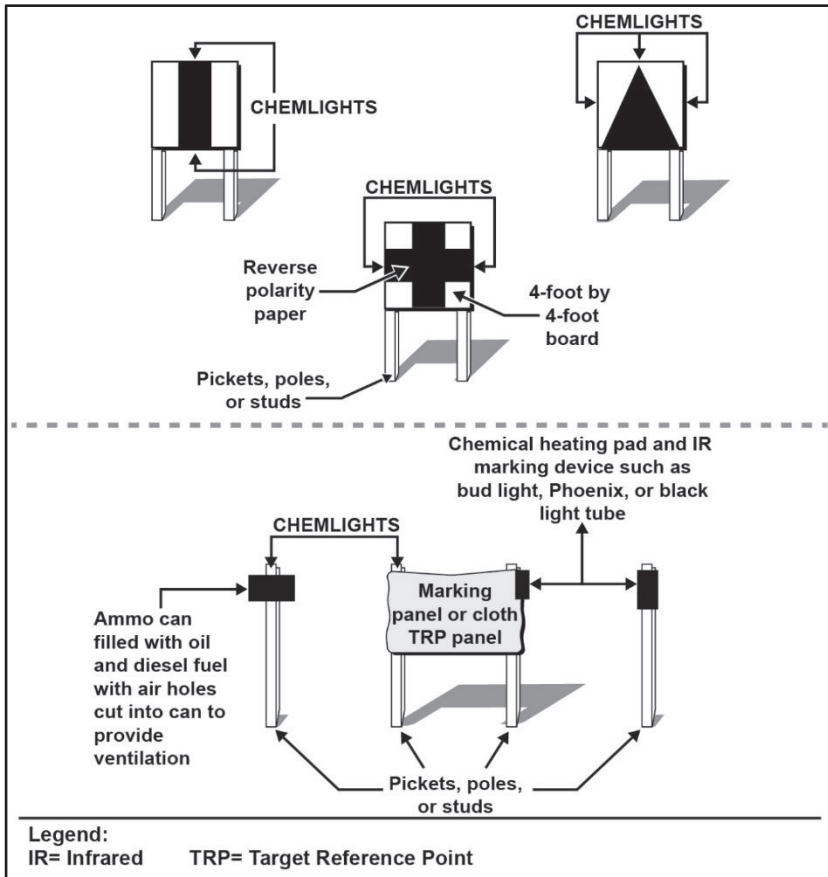


Figure A-4. Constructed target reference point markers example

Engagement Area

A-37. This fire control measure is an area along an enemy avenue of approach where the leader intends to mass the fires of available weapons to destroy an enemy force. The size and shape of the EA is determined by the degree of relatively unobstructed intervisibility available to the unit's weapons systems in their firing positions and by the maximum range of those weapons. Typically, the platoon leader/*platoon commander* delineates responsibility within the EA by assigning each squad a sector of fire or direction of fire.

Sector of Fire

A-38. A sector of fire is a defined area that must be covered by direct fire. Leaders assign sectors of fire to ensure coverage of an area of responsibility. In assigning sectors of fire, leaders consider the number and types of weapons available. In addition, they must

consider acquisition system type and field of view in determining the width of a sector of fire. For example, while unaided vision has a wide field of view, its ability to detect and identify targets at range and in limited visibility conditions is restricted. Conversely, most fire control acquisitions systems have greater detection and identification ranges than the unaided eye, but their field of view is narrow. Means of designating sectors of fire include the following:

- TRP.
- Clock direction.
- Terrain-based quadrants.
- Friendly-based quadrants.
- Azimuth or cardinal direction.

Direction of Fire

A-39. A direction of fire is an orientation or point used to assign responsibility for a particular area on the battlefield that must be covered by direct fire. Leaders designate directions of fire for the purpose of acquisition or engagement by subordinate elements. Direction of fire is most commonly employed when assigning sectors of fire would be difficult or impossible because of limited time or insufficient reference points. Means of designating a direction of fire include the following:

- Closest TRP.
- Clock direction.
- Cardinal direction.
- Tracer on target.
- Infrared laser pointer.

Quadrants

A-40. Quadrants are subdivisions of an area created by superimposing an imaginary pair of perpendicular axes over the terrain to create four separate areas or sectors. Establish quadrants on the terrain, friendly forces, or on the enemy formation.

Note. Techniques in which quadrants are based on enemy formations usually are referred to as target array; it is covered in discussion of threat-based fire control measures.

A-41. The method of quadrant numbering is established in the unit SOP; however, care must be taken to avoid confusion when quadrants based on terrain, friendly forces, and enemy formations are used simultaneously.

Terrain-Based Quadrant

A-42. A terrain-based quadrant entails use of a TRP, either existing or constructed, to designate the center point of the axes dividing the area into four quadrants. This technique can be employed in the offense and defense. In the offense, the platoon

leader/*platoon commander* designates the center of the quadrant using an existing feature or by creating a reference point. For example, using a ground burst illumination round, an obscurant marking round, or a fire ignited by incendiary or tracer rounds. The axes delineating the quadrants run parallel and perpendicular to the direction of movement. In the defense, the platoon leader/*platoon commander* designates the center of the quadrant using an existing or constructed TRP.

A-43. In examples shown in figure A-5, quadrants are marked using the letter “Q” and a number (Q1 to Q4); quadrant numbers are in the same relative positions as on military map sheets (from Q1 as the upper left-hand quadrant clockwise to Q4 as the lower left-hand quadrant).

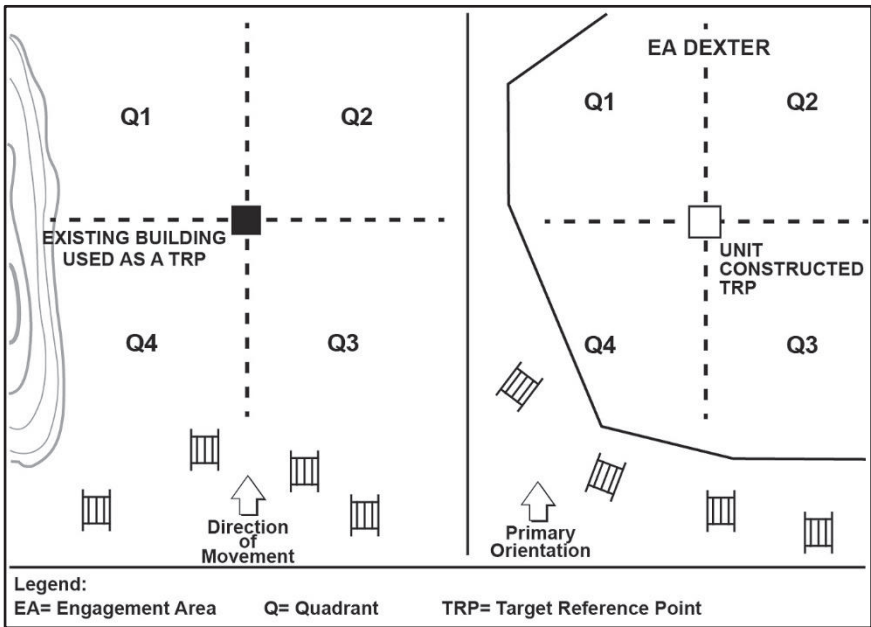


Figure A-5. Terrain-based quadrants example

Friendly-Based Quadrant

A-44. The friendly-based quadrant technique entails superimposing quadrants over the unit's formation. The center point is based on the center of the formation, and axes run parallel and perpendicular to the general direction of travel. For rapid orientation, the friendly quadrant technique may be better than the clock direction method; because different elements of a large formation rarely are oriented in the same exact direction and the relative dispersion of friendly forces causes parallax to the target. Figure A-6 illustrates use of friendly-based quadrants.

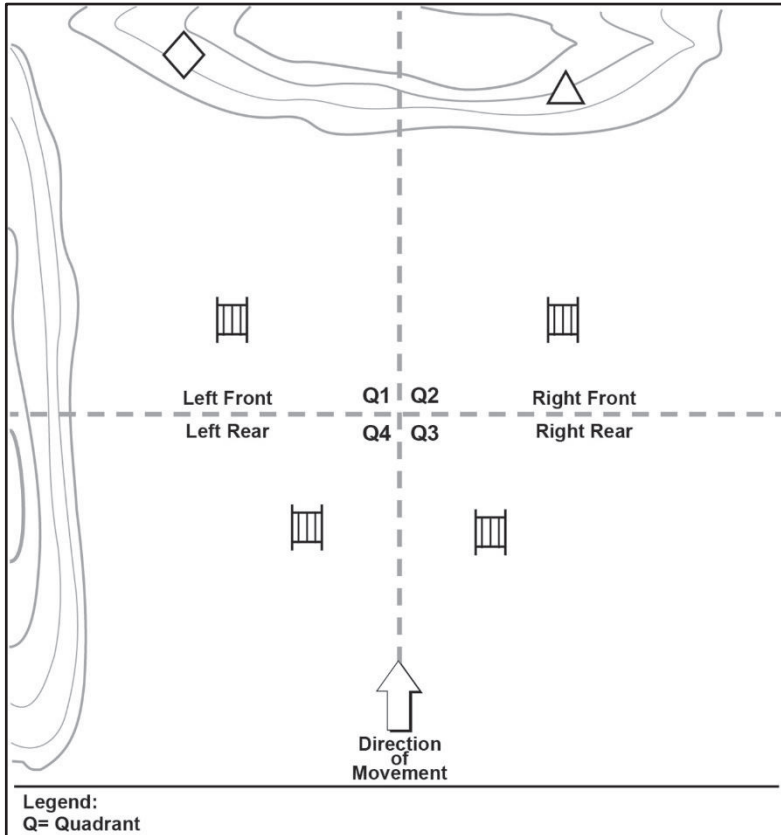


Figure A-6. Friendly-based quadrants example

Maximum Engagement Line

A-45. The maximum engagement line is the linear depiction of the farthest limit of effective fire for a weapon or unit. This line is determined by the weapons, unit's maximum effective range and by the effects of terrain. For example, slope, vegetation, structures, and other features provide cover and concealment preventing the weapon from engaging to the maximum effective range. A maximum engagement line serves

several purposes. The platoon leader/*platoon commander* can use it to prevent crews from engaging beyond the maximum effective range, to define criteria of the establishment of triggers, and to delineate the maximum extent of sectors on the AO sketch.

Restrictive Fire Line

A-46. There is a linear fire control measure beyond which engagement is prohibited without coordination. In the offense, the platoon leader/*platoon commander* can designate a RFL to prevent a base-of-fire element from firing into the area where an assaulting element is maneuvering. This technique is particularly important when armored vehicles support the maneuver of rifle squads. In the defense, the platoon leader/*platoon commander* may establish a RFL to prevent the unit from engaging a friendly rifle squad positioned in restricted terrain on the flank of an avenue of approach.

Final Protective Line

A-47. The final protective line is a line of fire established where an enemy assault is to be checked by the interlocking fires of all available weapons. The unit reinforces this line with protective obstacles and with final protective fires whenever possible. Initiation of the final protective fires is the signal for elements, crews, and individuals to shift fires to their assigned portion of the final protective line. They spare no ammunition in repelling an enemy assault.

THREAT-BASED FIRE CONTROL MEASURES

A-48. The platoon leader/*platoon commander* uses threat-based fire control measures to focus and control fires by directing the unit to engage a specific enemy element rather than to fire on a point or area. The following paragraphs A-49 through A-53 describe the TTP associated with this type of control measure.

Rules of Engagement

A-49. ROE specify the circumstances and limitations under which forces may engage; they include definitions of combatant and noncombatant elements and prescribe the treatment of noncombatants. Factors influencing ROE are national command policy, mission, commander's intent, the operational environment, and the law of war. ROE always recognize a Service member's right of self-defense. At the same time, they clearly define circumstances in which a Service member may fire.

A-50. For example, during a cordon and search mission, the command may establish a WCS of WEAPONS TIGHT for certain types of ammunition or weapons. The commander does this because higher command directives explicitly restrict the use of these weapons or ammunition to prevent damage.

Weapons Control Status

A-51. As discussed in chapter 8, the platoon leader/*platoon commander* may impose a WCS in addition to the internal weapons safety posture induced by leaders for all

weapons systems. A WCS outlines the conditions, based on target identification criteria, under which friendly elements may engage. This status is adjustable, as necessary. Typically, changes to the WCS occur and correspond with the phases of an operation:

- Weapons Hold. Engage only if engaged or ordered to engage.
- Weapons Tight. Engage only targets positively identified as enemy.
- Weapons Free. Engage targets not positively identified as friendly.

Engagement Priorities

A-52. Engagement priorities, which entail the sequential ordering of targets to be engaged, can serve one or more of the following critical fire control functions:

- Prioritize high value targets. In concert with the concept of the operation, the platoon leader/*platoon commander* determines which target types provide the greatest payoff; the platoon leader/*platoon commander* then can set these as a unit engagement priority. For example, the platoon leader/*platoon commander* may decide destroying enemy engineer assets is the best way to prevent the enemy from reducing an obstacle.
- Employ the best weapons to the target. Establishing engagement priorities for specific friendly systems increases the effectiveness with which the unit employs its weapons.
- Distribute the unit's fires. Establishing different priorities for similar friendly systems helps to prevent overkill and achieve distribution of fires.

Trigger

A-53. A trigger is a specific set of conditions dictating initiation of fires. Often referred to as engagement criteria, a trigger specifies the circumstances in which subordinate elements should engage. The circumstances can be based on a friendly or enemy event. For example, the trigger for a friendly platoon to initiate engagement could be three or more enemy combat vehicles passing or crossing a given point or line. This line can be natural or manmade linear feature, such as a road, ridge line, or stream. It also may be a line perpendicular to the unit's orientation, delineated by one or more reference points.

FIRE PATTERNS

A-54. Fire patterns are a threat-based measure designed to distribute the fires of a unit simultaneously among multiple, similar targets. Platoons use those most often to distribute fires across an enemy formation. Leaders designate and adjust fire patterns based on terrain and anticipated enemy formation. The basic fire patterns, illustrated in figure A-7, include:

- Frontal fires.
- Cross fires.
- Depth fires.

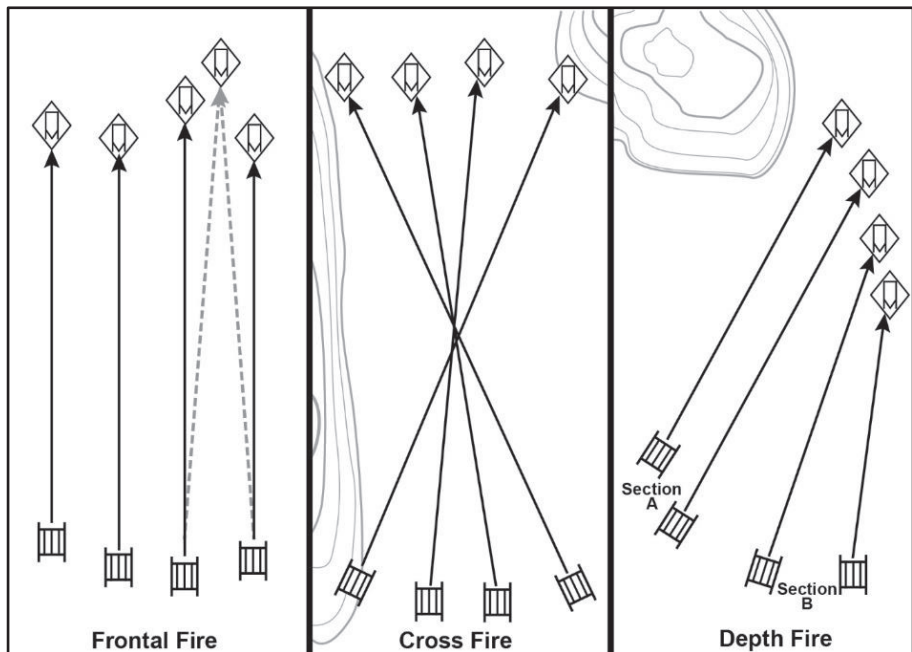


Figure A-7. Fire patterns examples

A-55. Leaders may initiate frontal fire when targets are arrayed in front of the unit in a lateral configuration. Weapons systems engage targets to their respective fronts. For example, the left flank weapon engages the left-most target; the right flank weapon engages the right-most target. As weapons systems destroy targets, weapons shift fires toward the center of the enemy formation from near too far.

A-56. Leaders initiate cross fire when targets are arrayed laterally across the unit's front in a manner permitting diagonal fires at the enemy's flank, or when obstructions prevent unit weapons from firing frontally. Right flank weapons engage the left-most targets; left flank weapons engage the right-most targets. Firing diagonally across an EA provides more flank shots, thus increasing the chance of kills; it also reduces the possibility of the enemy detecting friendly elements should the enemy continue to move

forward. As friendly elements destroy targets, weapons shift fires toward the center of the enemy formation.

A-57. Leaders initiate depth fire when enemy targets disperse in-depth, perpendicular to the unit. Center weapons engage the closest targets; flank weapons engage deeper targets. As the unit destroys targets, weapons shift fires toward the center of the enemy formation.

FIRING TECHNIQUES

A-58. In addition to employing fire patterns, the platoon leader/*platoon commander* may choose one or a combination of three firing techniques to distribute and control the direct fires of the platoon: simultaneous, alternating, and observed.

Simultaneous Fire

A-59. This is the primary firing technique used by the platoon. It is employed during most offensive engagements when the unit encounters surprise targets. It is also used in most defensive engagements when the enemy array is numerous enough to require multiple engagements by each tank in the unit. In that case, all tanks engage simultaneously in their assigned sectors.

Alternating Fire

A-60. Alternating fire is normally used when the platoon is in a defensive position or is undetected. Each tank alternates firing and observing in conjunction with the other tank in the section. During alternating fire, Tanks 2 and 3 (the wingmen in each section) are normally the first to fire at their outside targets. The section leaders (the platoon leader/*platoon commander* and platoon sergeant) provide observation before firing at their targets. The process continues until all targets are destroyed or the leader switches to simultaneous fire.

Observed Fire

A-61. Observed fire is normally used when the platoon is in protected defensive positions and engagement ranges are in excess of 2500 meters. The first tank to fire in each section engages designated targets while the second tank observes. The second tank prepares to engage targets in the event the first tank misses consistently, experiences a malfunction, or runs low on ammunition. This technique maximizes observation and assistance capabilities for the observing tank while protecting its location.

Target Array

A-62. Target array enables the leader to distribute fires when the enemy force is concentrated and terrain-based controls are inadequate. Forces create this threat-based distribution measure by superimposing a quadrant pattern on the enemy formation. Crews center the pattern on the enemy formation, with the axis running parallel and perpendicular to the enemy's direction of travel. The target array fire control measure is effective against an enemy with a well-structured organization and standardized doctrine. However, it may prove less effective against an enemy presenting few organized formations, or does not follow strict prescribed tactics. Leaders describe quadrants using the quadrants' relative locations. The examples in figure A-8 illustrate the target array technique.

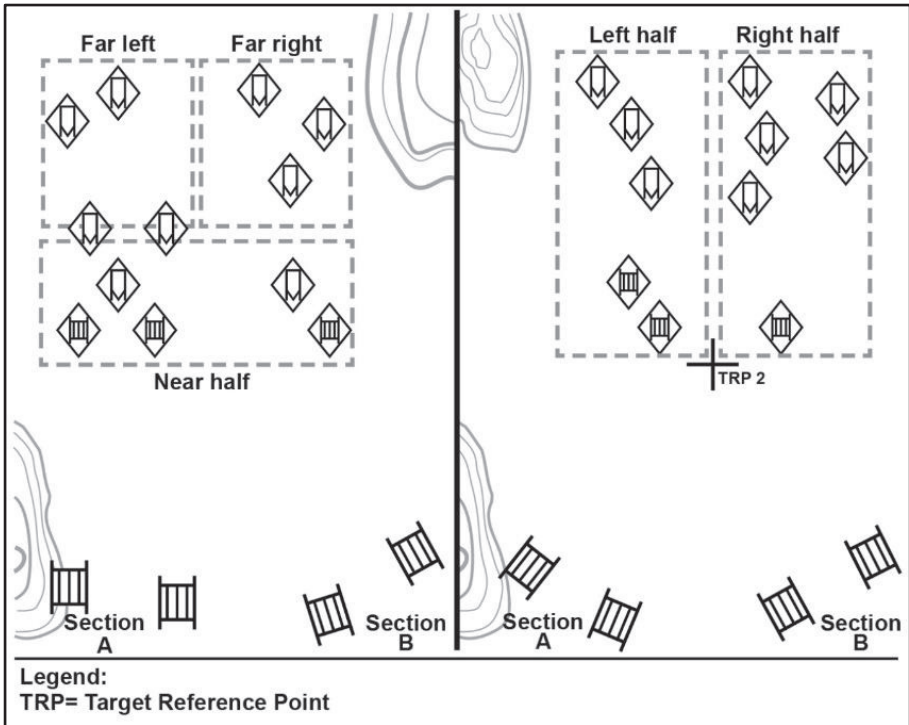


Figure A-8. Target array example

FIRE COMMANDS

A-63. Fire commands are oral orders issued by leaders to focus and distribute fires as required achieving decisive effects against the enemy. They allow leaders to rapidly and concisely articulate their firing instructions using a standard format (Refer to TC 3-20.31-4 for more information). Unit fire commands include these elements, which are discussed in the following paragraphs A-64 through A-74 on pages A-21 through A-23:

- Alert.
- Weapon or ammunition (optional).
- Target description.
- Direction.
- Range (optional).
- Method.
- Control (optional).
- Execution.
- Termination.

ALERT

A-64. The alert specifies the elements directed to fire. It does not require the leader initiating the command to identify themselves. Examples of the alert element (call signs and code words based on unit SOP) include the following:

- GUIDONS (all subordinate elements).
- RED (1st platoon only).

WEAPON OR AMMUNITION (OPTIONAL)

A-65. This element identifies the weapon and ammunition to be employed by the alerted elements. Leaders may designate the type and number of rounds to limit expenditure of ammunition. Examples of this element include the following:

- TWO ROUNDS SABOT.
- ONE ROUND HEAT.

TARGET DESCRIPTION

A-66. Target description designates which enemy elements are to be engaged. Leaders may use the description to focus fires or achieve distribution. Examples of target description include the following:

- TROOPS IN OPEN.
- BUNKER.
- PERSONNEL CARRIERS.

DIRECTION

A-67. This element identifies the location of the target. There are several ways to designate the location of target, including the following:

- Closest TRP. Example: TRP 11.
- Terrain quadrant. Example: QUADRANT ONE.
- Clock direction. Example: ELEVEN O’CLOCK.
- Friendly quadrant. Example: LEFT FRONT.
- Target array. Example: FRONT HALF.

RANGE (OPTIONAL)

A-68. The range element identifies the distance to the target. Announcing range is not necessary for systems ranging finder-equipped or employing command-guided or self-guided munitions. For systems requiring manual range settings, leaders have a variety of means for determining range, including the following:

- Predetermined ranges to target registration points or PLs.
- Laser range finders.
- Range stadia.
- Mil reticle.

METHOD

A-69. Method describes to the firer the way or method the target(s) are engaged. Leaders use this element when presented with multiple targets to identify which target to engage first. For collective fire commands, this can also indicate the fire pattern used to engage the threats. Multiple methods may be used in one fire command.

CONTROL (OPTIONAL)

A-70. The platoon leader/*platoon commander* may use this optional element to direct desired target effects, distribution methods, or engagement techniques. Subordinate leaders may include the control element to supplement the platoon leader's/*platoon commander's* instructions and achieve distribution. Examples of information specified in the control element include the following:

- Target array. Example: FRONT HALF.
- Fire pattern. Example: FRONTAL.
- Terrain quadrant. Example: QUADRANT ONE.
- Engagement technique. Example: VOLLEY.
- Target effect. Example: AREA.

EXECUTION

A-71. The execution element specifies when fires are initiated. The platoon leader/*platoon commander* may wish to engage immediately, delay initiation, or delegate authority to engage. Examples of this element include the following:

- FIRE.
- AT MY COMMAND.
- AT YOUR COMMAND.
- AT PHASE LINE ORANGE.

TERMINATION

A-72. Termination is the ninth element of the fire command. It informs the gunners to stop firing all weapons and systems in their control. All fire commands are terminated.

This command may be given by any Service member or crewmember for any reason, typically safety.

A-73. The leader that issued the fire command is required to terminate the fire command at the completion of every engagement, regardless if another Service member or crewmember announced it. All fire commands, regardless of type or who issued them, are terminated by the announcement of, CEASE FIRE.

A-74. Built-up areas consist mainly of manmade features such as buildings, streets, and subterranean systems. These features of urban terrain create a variety of tactical problems and possibilities.

LIMITATIONS IN URBAN ENVIRONMENTS

A-75. To ensure that the platoon can operate effectively in an urban environment, the platoon observation and direct fire plans must address the ground-level fight (in streets and on the ground floor of buildings), the above-ground fight (in multistoried buildings), and the subterranean fight. (Refer to ATTP 3-06.11 for more information.) The following considerations apply:

- An important aspect of the urban environment is that built-up areas complicate, confuse, and degrade command and control.
- Streets are usually avenues of approach. Forces moving along a street, however, are often canalized by buildings and have little space for off-road maneuver. Obstacles on urban streets are usually more effective than obstacles on roads in open terrain since they are more difficult to bypass.
- Buildings offer cover and concealment and severely restrict movement of military elements, especially armored vehicles. They also severely restrict fire distribution and control, especially fields of fire. Every street corner and successive block becomes an intervisibility line, requiring careful overwatch. Thick-walled buildings provide ready-made, fortified positions.
- Subterranean systems found in some built-up areas can be easily overlooked, but they may prove critical to the outcome of urban operations.

A-76. Numerous factors related to vehicles and equipment affects the tank platoon's planning in the urban environment. These factors include the following:

- The preferred main gun rounds in the urban environment are high explosive AT, multipurpose AT (ground mode M830A1), multipurpose AT-obstacle-reducing (M908), and canister (M1028). These all perform much better than sabot rounds against bunkers and buildings.
- High explosive AT ammunition opens a larger hole in reinforced concrete or masonry structures than multipurpose AT or multipurpose AT-obstacle-reducing (M908). Both multipurpose AT and multipurpose AT-obstacle-reducing, however, offer greater incapacitation capability inside the structure.
- High explosive AT ammunition arms between 11 and 60 meters from the gun muzzle and loses most of their effectiveness against urban targets at ranges of less than the arming range.

- Multipurpose AT and multipurpose AT-obstacle-reducing rounds arm between 11 and 30 meters from the muzzle of the gun and affect the tank platoon's planning. Because of the shape and metal components of the projectiles, however, this ammunition remains effective at ranges of less than the arming range.
- Canister (M1028) ammunition is used primarily against troop formations from 100 to 500 meters, but can be used effectively against light-skinned vehicles (technical) and to reduce simple obstacles at ranges of less than 200 meters.
- Sabot petals, including those on multipurpose AT and multipurpose AT-obstacle-reducing, endanger accompanying Infantry elements. They create a hazard area extending 70 meters on either side of the gun-target line, out to a range of one kilometer.
- Hard, smooth, flat surfaces are characteristics of urban terrain. The effect of the rounds is reduced by their tendency to strike at an oblique angle and increase the threat of ricochets.
- Engagement ranges tend to be less than 200 meters and could be as little as 35 meters when engaging enemy personnel.
- There tends to be large amounts of flammable material in the urban area, and leaders should understand that engagements have the chance of causing large fires.
- The tank's main gun can depress to minus 10 degrees and can elevate to plus 20 degrees. This creates considerable dead space for the crew at the close ranges that are typical in the urban environment. See figure A-9 for an example of dead space in an urban environment.
- The crew remotely operated weapons system (known as CROWS) has the capability to scan 360 degrees, with the ability to depress to minus 10 degrees to elevate plus 65 degrees.

Note. Not all M1 series tanks are outfitted with CROWS. This is only if the tank has it available.

- The external M2 heavy barrel machine gun can elevate to plus 36 degrees; however, the tank commander must be exposed to fire the M2 on the M1A2 or M1A2 system enhancement package.
- The M240 coax machine gun can effectively deliver suppressive fires against enemy personnel and against enemy positions that are behind light cover.
- The loader's M240 machine gun can effectively deliver suppressive fire against enemy personnel and against enemy positions that are behind light cover; however, the loader must be exposed to operate it. This weapon may be dismounted and used in a ground role if units are equipped with the M240 dismount kit.
- When operating with hatches closed, the tank crew has limited visibility to the sides and rear and no visibility to the top.

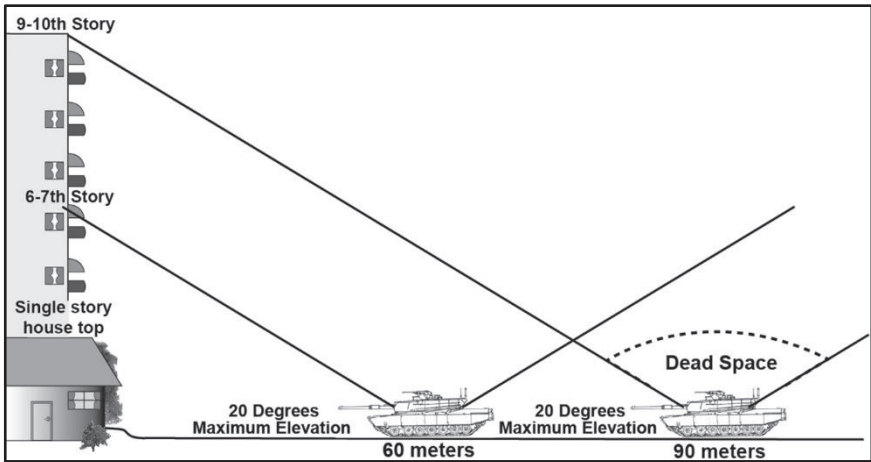


Figure A-9. Tank dead space above street level

A-77. In the urban environment, the .50 caliber machine gun and the 7.62-mm M240 machine gun provide high-volume, long-range, automatic fires for the suppression or destruction of targets. They provide final protective fire along fixed lines and can be used to penetrate light structures; the .50 caliber machine gun is most effective in this role. Tracers from both machine guns are likely to start fires.

EMPLOYMENT

A-78. The primary consideration that impacts the employment of machine guns within urban areas is the limited availability of long-range fields of fire.

A-79. The .50 caliber machine gun is often employed on its vehicular mount during offensive and defensive operations. The .50 caliber machine gun can be used as an accurate, long-range weapon and can supplement sniper fires. The M240 machine gun is useful to suppress and isolate enemy defenders.

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Appendix B

Chemical, Biological, Radiological, and Nuclear

CBRN operations are the employment of tactical capabilities that counter the entire range of CBRN threats and hazards. These are done through CBRN proliferation prevention, CBRN counterforce, CBRN defense, and CBRN consequence management activities in support of operational and strategic objectives to combat CBRN and operate safely in CBRN environments. Many state and nonstate actors (including terrorists and criminals) possess or have the capability to possess, develop, or proliferate CBRN weapons. U.S. policy prohibits the use of chemical or biological weapons under any circumstances, but it reserves the right to employ nuclear weapons. Many potential enemies are under no such constraint. (Refer to FM 3-11/MCWP 3-37.1/NWP 3-11/AFTTP 3-2.42 for more information.)

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SECTION I – MISSION-ORIENTED PROTECTIVE POSTURE ANALYSIS

B-1. Protecting Service members from the harmful hazards associated with CBRN attacks in an AO is essential to preserving combat power. When the probability of CBRN threats exists, commanders and leaders must conduct a deliberate analysis to posture and equip forces for survival and mission effectiveness. CBRN and medical personnel consider mission variables and related information to provide recommendations on protection requirements that are reflected in the MOPP level.

MISSION-ORIENTED PROTECTIVE POSTURE LEVEL

B-2. Leader involvement is necessary to ensure safe and sustained operations under various climatic conditions. Leaders should develop standard responses and COAs for each projected mission. If the probability of CBRN threats exists all personnel will carry a protective mask, and ensure that individual protective gear is available within two hours. Second set available in six hours. The standard MOPP are—

- MOPP0. Carry a protective mask, and ensure that individual protective gear is within arm's reach.
- MOPP1. Suit worn. Mask, gloves, and boots carried.
- MOPP2. Suit and boots worn. Gloves and mask carried.
- MOPP3. Suit, boots, and mask worn. Gloves carried.
- MOPP4. All protection worn.

DETERMINING APPROPRIATE MOPP LEVEL

B-3. Leaders determine the appropriate MOPP level by assessing mission variables and weighing the impact of increased protection levels. Higher HQ provide MOPP level directives to subordinate elements. (Refer to ATP 3-11.32/MCWP 10-10E.8/NTTP 3-11.37/AFTTP 3-2.46 for more information).

B-4. When a CBRN attack is recognized, everyone in the company team must receive the warning and assume the appropriate MOPP level. Personnel in immediate danger need warnings they can see or hear. The alarm or signal must be simple and unmistakable if it is to produce a quick and correct reaction.

B-5. MOPP reduction decisions are between the most difficult to make because of the many considerations that affect the final decision. Commanders must evaluate the situation and mission perspectives. Factors include the criticality of the current mission, potential effects of personnel exposure, and the impact on the casualty care system.

B-6. If a CBRN hazard is located, the contaminated area should be marked. The CBRN warning and reporting system and standardized contamination markers contribute to orderly warning procedures. Warning methods include automatic alarms, vocal alarms (a shout of GAS is the most frequently used alarm), non-vocal alarms (horn blasts or banging of metal-to-metal objects), and visual alarms, most commonly the appropriate hand-and-arm signals.

B-7. The M1 series of tanks have a nuclear, biological, chemical system that provides the crew protection when maneuvering or fighting through a chemically or biologically contaminated area. Steps for placing this system into operation is found in the following TMs:

- M1A1 Abrams tank, TM 9-2350-264-10-2.
- M1A2 system enhancement package Abrams tank, TM 9-2350-388-10-1.

SECTION II – ACTIONS DURING AND AFTER AN ATTACK

B-8. The tank platoon will face a combination of CBRN attacks. If the platoon cannot avoid a CBRN hazard, it must be prepared to protect personal and equipment from the exposure. The key to effective protection in a CBRN environment is the tank platoon's proficiency in automatically and correctly implementing CBRN defense SOPs.

CHEMICAL DEFENSE

B-9. Give the alarm. Have all unmasked soldiers put on their protective masks and other MOPP gear. All personnel should move inside their tanks; in most cases, they should place their hatches in the closed position to protect against gross contamination. Direct the crews of vehicles that are equipped with CBRN over pressurization to turn the system on. Use M256 chemical agent detector kits to determine the type of agent, and forward a CBRN-1 chemical report. Continue the mission.

B-10. Tactical and safety considerations (such as observation of the terrain, enemy disposition, and how much gross contamination that may be spread inside the vehicle) may outweigh the need to keep the tank's hatches closed. Depending on the tactical situation and unit SOP, platoon members may need to keep their hatches in the open or open-protected position.

BIOLOGICAL DEFENSE

B-11. After a biological attack, crewmen must assume that all surfaces have been exposed to germs. Do not eat food or drink water that may be contaminated. Eat or drink only food or water that has been stored in sealed containers; consume it only after washing and cleaning the outside of the container. All water must be boiled for at least 15 minutes.

NUCLEAR DEFENSE

B-12. This discussion focuses on defensive measures the platoon must be prepared to take to protect tank crewmen, whether they are in their vehicle or have dismounted.

MOUNTED DEFENSIVE ACTIONS

B-13. If time permits, the platoon should take the following actions:

- Position each vehicle behind the best available cover with the front of the vehicle toward the blast.
- Point the gun away from the blast.
- Lock the brakes.
- Secure loose equipment inside the vehicle to prevent injuries and equipment damage.
- Secure all exterior components that could be damaged by the blast (such as water cans, duffel bags, and antennas) inside the vehicle.

- Turn off all radios as well as turret and master power.
- Close and lock all hatches, including ballistic shields.
- Take actions to protect the head and eyes. As necessary, wear helmets and eye protection whenever possible.

DISMOUNTED DEFENSIVE ACTIONS

B-14. Immediately drop flat on the ground (face down) or to the bottom of a fighting position, facing away from the fireball, never run for cover. Cover as much exposed skin as possible. Keep eyes tightly closed. Remain down until the blast wave has passed and debris has stopped falling. Stay calm, check for injury, check weapons and equipment for damage, and prepare to continue the mission.

DEFENSE AFTER A NUCLEAR ATTACK

B-15. Once the attack has ended, forward a CBRN-1 nuclear report, organize survivors, secure and organize equipment, repair and reinforce the BP, help casualties, improve protection against possible fallout, and begin continuous monitoring. If the radiation dose rate reaches a hazardous level after fallout has ended, be prepared to move, on order, to a less hazardous area.

B-16. When operating in or crossing radiologically contaminated areas, vehicles should be closed tightly. Crewmen wear their protective masks to prevent inhalation of radiological particles; cargoes should be covered by tarps or tenting. Mission permitting, vehicles should keep their speed down to prevent dust and should maintain adequate following distance to stay out of the dust raised by preceding vehicles. After the unit exits a contaminated area, personnel, equipment, and cargo should be checked for contamination and decontaminated, if necessary.

B-17. At a minimum, each crew should monitor their total dose accumulated using total dose equipment such as the UDR-13 or DT-236. Total dose and dose rates should be monitored closely as crews operate and be reported to the company to maintain compliance with operational exposure guidance and provide medical tracking of crew radiation exposure.

MARKING CONTAMINATED AREAS

B-18. Contamination must be marked so unsuspecting personnel will not be exposed to it. When platoon monitoring teams detect or suspect a CBRN hazard, they mark all likely entry points into the area and report the contamination to higher HQ. The only exception to this policy is if marking the area would help the enemy. If this exception is made by the commander, the hazard must still be reported to protect friendly units.

TYPES OF MARKERS

B-19. U.S. forces use North Atlantic Treaty Organization standard markers to make it easier for allies to recognize the hazards. These markers are in the standard CBRN

marking set. The colors and inscriptions on a marker indicate the type of hazard. Additional information is written on the front of the sign.

MARKING PROCEDURES

B-20. Markers face away from the contamination. For example, if markers are placed on the edge of a contaminated area to mark a radiological hot spot, they face away from the point of the highest contamination reading. Markers are placed along roads and trails and at other likely points of entry. When time and mission permit, additional markers should be emplaced. The distance between signs varies. In open terrain, they can be placed 25 to 100 meters apart; in hilly or wooded areas, they should be placed more frequently. An observer should be able to stand in front of a marker and see the markers to the left and right of it.

B-21. Units discovering a marked contaminated area do not have to conduct elaborate, time-consuming surveys. They simply check the extent of contamination and use the information to adjust their plans, if necessary. If the size of the hazard has changed, they relocate the signs. If the hazard is gone, they remove the signs. Changes are reported to higher HQ.

SECTION III – UNMASKING PROCEDURES

B-22. Personnel should unmask as soon as possible except when a live biological or toxin attack is expected. Use the procedures outlined in the following paragraphs B-23 through B-24 on page B-6 to determine if unmasking is safe.

UNMASKING WITH M256/M256A1/A2 KIT

B-23. If an M256/M256A1/A2 detector kit is available, use it to supplement the unmasking procedures. The kit does not detect all agents; therefore, proper unmasking procedures, which take approximately 15 minutes, must still be used. If all tests with the kit (including a check for liquid contamination using M8 detector paper) have been performed and the results are negative, use the following procedures:

- The senior person should select a crewmember to start the unmasking procedures. If possible, they move to a shady place; bright, direct sunlight can cause pupils in the eyes to constrict, giving a false symptom.
- The selected personnel unmask for five minutes, then clear and reseal their masks.
- Observe the personnel for 10 minutes. If no symptoms appear, request permission from higher HQ to signal ALL CLEAR.
- Watch all crewmembers for possible delayed symptoms. Always have first-aid treatment immediately available in case it is needed.

Note. Time to complete the M256/M256A1/A2 detector kit, including using M8 detector paper for liquid, takes approximately 20 minutes. Two kits completed simultaneously along with unmasking procedures with the M256/M256A1/A2 detector kit will take approximately 35 minutes to complete.

UNMASKING WITHOUT M256/M256A1/A2 KIT

B-24. If an M256/M256A1/A2 kit is not available, the unmasking procedures take approximately 35 minutes. When a reasonable amount of time has passed after the attack, find a shady area. Use M8 paper to check the area for possible liquid contamination. Conduct unmasking using these procedures:

- The senior person selects a crewmember. They take a deep breath and break their mask seals, keeping their eyes wide open.
- After 15 seconds, the personnel clear and reseal their masks. Observe them for 10 minutes.
- If no symptoms appear, the same personnel break the seals, take two or three breaths, and clear and reseal their masks. Observe them for 10 minutes.
- If no symptoms appear, the same personnel unmask for five minutes, and then redon their masks.
- If no symptoms appear in 10 minutes, request permission from higher HQ to signal ALL CLEAR. Continue to observe all crewmembers in case delayed symptoms develop.

ALL-CLEAR SIGNAL

B-25. Units pass the all-clear signal by word of mouth through their chain of command. Leaders initiate the signal after testing for contamination proves negative. The commander designates the specific all-clear signal and includes it in the unit SOP or the OPOD. If required, standard sound signals may be used, such as a continuous, sustained blast on a siren, vehicle horn, or similar device. When ALL CLEAR is announced on the radio, the receiving unit must authenticate the transmission before complying.

SECTION IV – DECONTAMINATION

B-26. During continuous operations in areas of contamination, decontamination is essential in preventing casualties and severe combat degradation. The tank platoon gains maximum benefit from the available time and decontamination resources by observing these considerations:

- The platoon should execute decontamination as soon as possible and as far forward as possible.
- Decontamination should be conducted only to the extent necessary to ensure the platoon's safety and operational readiness.

- Decontamination priorities with regard to unit safety and mission accomplishment should be strictly observed.

B-27. These principles are consistent with doctrine that places the burden of decontamination at battalion or company level. For this reason, the tank platoon must develop a thorough SOP covering decontamination methods and priorities, using all available assets to the maximum extent possible. Refer to ATP 3-11.32/MCWP 10-10E.8/NTTP 3-11.37/AFTTP 3-2.46 for a more detailed examination of CBRN decontamination procedures.

IMMEDIATE DECONTAMINATION

B-28. Immediate decontamination minimizes casualties and limits the spread or transfer of contamination. This action is carried out by the contaminated individual and the purpose is to save lives and reduce penetration of agent into surfaces. This may include decontamination of personnel, clothing, and equipment. Immediate decontamination should help prevent casualties and permit the use of individual equipment and key systems.

SKIN DECONTAMINATION

B-29. Skin decontamination is a basic survival skill and should be performed within one minute of being contaminated. Decontamination of the eyes by flushing with water as soon as possible following contamination. During skin decontamination and personal wipe down, each Service member carries their own skin decontamination kit. The skin decontamination kit should be stored in the individual's mask carrier or if issued, in the individual equipment carrier bag. Personal wipe down is also done with these kits.

PERSONAL WIPE DOWN

B-30. Personal wipe down decontamination is performed within 15 minutes of contamination to remove contamination from individual equipment. Use detector paper or monitor to locate the agent. Use a radiation detection, indication, and computation set to locate radiological contamination; and then brush, wipe, or shake it off. Individual gear decontamination uses a separate and larger type of decontamination kit.

B-31. Crews use joint chemical agent detectors to monitor potential contamination and then use the M100 sorbent decontamination system (NSN 4230-01-466-9095) to provide immediate decontamination to contaminated surfaces of the turret and hull that the crew may touch when exiting the tank.

B-32. In the event of CBRN contamination of optics, crews conduct tactical decontamination of vision blocks and optics including main gun optics, CITYV, crosswind sensor, and muzzle reference sensor using the M334 Decontamination Kit Individual Equipment (NSN 4230-01-643-8267).

OPERATOR WIPE DOWN

B-33. Operator wipe down decontamination is done within 15 minutes of contamination to surfaces that operators need to touch or contact to operate the equipment. Radiological contamination in the form of dust particles may be wiped, scraped, or brushed off. During operator wipe down, the unit or activity should use individual equipment decontamination kits.

OPERATIONAL DECONTAMINATION

B-34. Operational decontamination allows a force to continue fighting and sustain momentum after being contaminated and eliminating or reducing the duration that MOPP equipment should be use. It limits the hazard of transferring contamination by removing most of the gross contamination on equipment and nearly all the contamination on individuals.

B-35. Operational decontamination is carried out by the contaminated unit (with possible assistance from an organic decontamination organization). Operational decontamination is restricted to the specific parts of contaminated, operationally-essential equipment, material, and work areas to minimize contact and transfer hazards and to sustain operations.

B-36. Contamination will accumulate and be encapsulated in dirt between sprockets, road wheels, and in between tracks. The air induction system from precleaner to plenum may also be contaminated and may require replacement V-packs to prevent restricted or blocked air flow into the turbine.

MOPP GEAR EXCHANGE

B-37. MOPP gear exchange should be performed as mission allows, but within 24 hours of being contaminated. A MOPP gear exchange allows a unit to remove the gross contamination from personnel and equipment and a return to an increased operational readiness in the pursuit of mission accomplishment.

VEHICLE WASH DOWN

B-38. Vehicle wash down is conducted as far forward as possible and is performed by the battalion decontamination specialist with assistance from the company or troop decontamination team. It is most effective if started within one hour after contamination. There are two steps in vehicle wash down:

- Step 1. Button up the vehicle and secure equipment.
- Step 2. Wash down the vehicle and equipment with hot, soapy water for two to three minutes.

B-39. Because speed is important, do not check vehicles for contamination after the vehicle has been washed down. Remove only gross contamination.

Appendix C

Infantry Organizations

Tank platoons almost never fight alone. Open terrain such as desert, plains, and flat countryside is conducive to the employment of massed armored formations. In such terrain, Infantry supports the forward movement of the armored units by providing local security, retaining key terrain, clearing dug-in enemy positions, and enhancing direct fires with organic small arms and AT fires. On the other hand, restricted terrain (such as built-up areas, forests, and jungles) increases the vulnerability of armored units. In close terrain, it is more advantageous for tanks to take a supporting role in the forward movement of the Infantry. Armored units provide close-in direct fire support against hard and soft targets that could slow the Infantry's advance.

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SECTION I – INFANTRY PLATOONS AND SQUADS

C-1. Besides understanding the capabilities and limitations of the tanks, the tank platoon leaders/*platoon commanders* must appreciate the tactical assets and liabilities of the mounted and dismounted Infantry. They must realize that dismounted Infantry elements move much more slowly than tanks over certain types of terrain, but that they can use terrain very effectively to gain a positional advantage over the enemy and that terrain has a direct impact on survivability for the Infantryman. (*For Marine Corps Tank/Infantry integration considerations, see MCTP 3-10B, Marine Corps Tank Employment.*)

INFANTRY SUPPORTING ARMOR VEHICLES

C-2. Infantrymen support vehicular forces by finding and reducing (or marking) AT obstacles. They detect and destroy or suppress enemy AT weapons. Infantrymen may designate targets for armored vehicles and protect them in close terrain.

MOBILITY

C-3. Mobility functions the Infantry provides to units with vehicles during combat operations include:

- Seize and retain terrain.
- Clear defiles and restrictive urban terrain ahead of vehicular forces.

FIREPOWER

C-4. Firepower functions the Infantry provides to units with vehicles during combat operations include:

- Actions on the objective (such as clear trenches, knock out bunkers, enter and clear buildings).
- Employ AT systems (Javelin) to destroy armored threats.

PROTECTION

C-5. Ways the Infantry protects units with vehicles during combat operations include:

- Provide local area security over dead space and blind spots that weapon systems on combat vehicles cannot cover.
- Consolidate and reorganize MEDEVAC and detainee operations.

TRANSPORTING INFANTRY

C-6. At times, the platoon leader/*platoon commander* may be required to transport Infantrymen on the tanks (see figure C-1). This is done only when contact is not expected. If the platoon is moving as part of a larger force and is tasked to provide security for the move, the lead section or element should not carry Infantry. Infantry and Armor leaders must observe the following procedures, precautions, and considerations when Infantrymen ride on tanks:

- Infantry squads should thoroughly practice mounting and dismounting procedures and actions on contact.
- Passengers must always alert the tank commander before mounting or dismounting and must follow the commands of the tank commander.
- Infantry platoons should be broken down into squad-sized groups, similar to air assault chinks.
- Platoon leaders/*platoon commanders*, platoon sergeants, or squad leaders should position themselves near the tank commander's hatch to talk to the tank commander and relay signals to the unit.

- Tank crewmen must remember that the vehicle cannot return fire effectively with Infantry onboard.
- Whenever possible, Infantry should mount and dismount over the left front slope of the vehicle. This ensures that the driver can see them and that they avoid the front of the coax machine gun.
- The Infantry must always have three points of contact with the vehicle.
- Infantry must remain behind the vehicle's smoke grenade launchers. This automatically keeps them clear of all weapon systems.
- If contact is made, wait for the vehicle to stop, at the tank commander's command, dismount IMMEDIATELY.
- Move at least five meters to the sides of the vehicle. DO NOT move behind or forward of the vehicle.
- DO NOT dangle arms or legs, equipment, or anything else off the side of a vehicle; they could get caught in the tracks, causing death, injury, or damage to the equipment or vehicle.

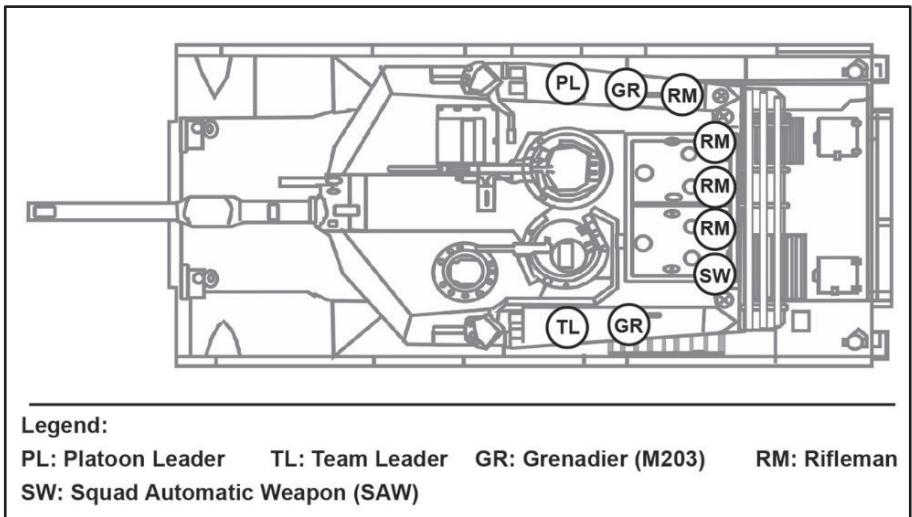


Figure C-1. Sample positions for Infantry riding on a tank

MECHANIZED INFANTRY PLATOON AND SQUADS

C-7. Bradley Infantry platoon and squad are a versatile force that can fight mounted, dismounted while being supported by the Bradley Fighting Vehicles, or dismounted and independent of the fighting vehicles. The Bradley Fighting Vehicle is an extremely powerful and robust weapon system that enables the mechanized Infantry to find and destroy the enemy at long-ranges while the dismounted Infantrymen, supported by the Bradley Fighting Vehicle, can destroy the enemy in close combat. Refer to ATP 3-21.8 for more information.

C-8. The mechanized Infantry platoon is equipped with four Bradley Fighting Vehicles and is divided into two elements: mounted and dismounted. Figure C-2 depicts the Bradley Fighting Vehicle-equipped mechanized Infantry platoon organization. The platoon can fight as two mutually supporting maneuver elements or as two distinct maneuver elements—one mounted and one dismounted. The platoon must prepare to fight in a variety of operational environments. Once the rifle squads have dismounted, the mounted element can provide a base of fire for the rifle squads as they close with and destroy the enemy.

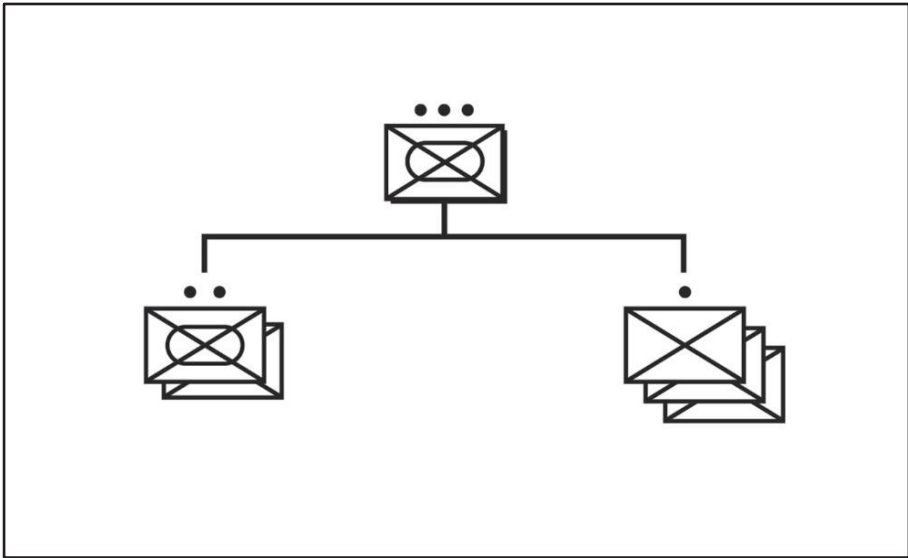


Figure C-2. Bradley platoon organization

INFANTRY RIFLE PLATOON AND SQUADS

C-9. Infantry rifle platoon and squads are optimized to conduct offensive, defensive, and stability or defense support of civil authorities' tasks (see figure C-3). The Infantry rifle platoon and squads can deploy worldwide and conduct unified land operations. Refer to ATP 3-21.8 for more information.

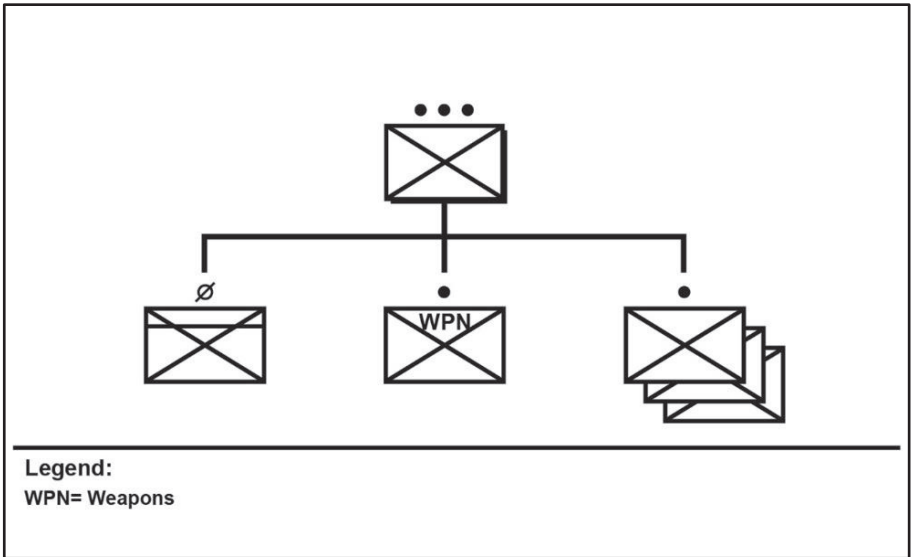


Figure C-3. Infantry rifle platoon and squads

C-10. Infantry units can operate in all terrain and weather conditions. They might be the dominant force because of rapid strategic deployment. In such cases, they can take and gain the initiative early, seize and retain or control terrain, and mass fires to stop the enemy. Infantry units are particularly effective in urban terrain, where they can infiltrate and move rapidly to the rear of enemy positions. The fundamental considerations for employing Infantry units result from the missions, types, equipment, capabilities, limitations, and organization of units.

STRYKER INFANTRY PLATOON AND SQUADS

C-11. Stryker Infantry platoon and squads primary mission is to close with and destroy the enemy through fire and maneuver; to destroy or capture the enemy; and to repel the enemy assault by fire, close combat, and counterattack. Refer to ATP 3-21.8 for more information.

C-12. The platoon must prepare to fight in a variety of operational environments. Once the rifle squads have dismounted, the mounted element can provide a base of fire for the rifle squads as they close with and destroy the enemy. Figure C-4 depicts the platoon HQ, the mounted elements, and the Infantry squads.

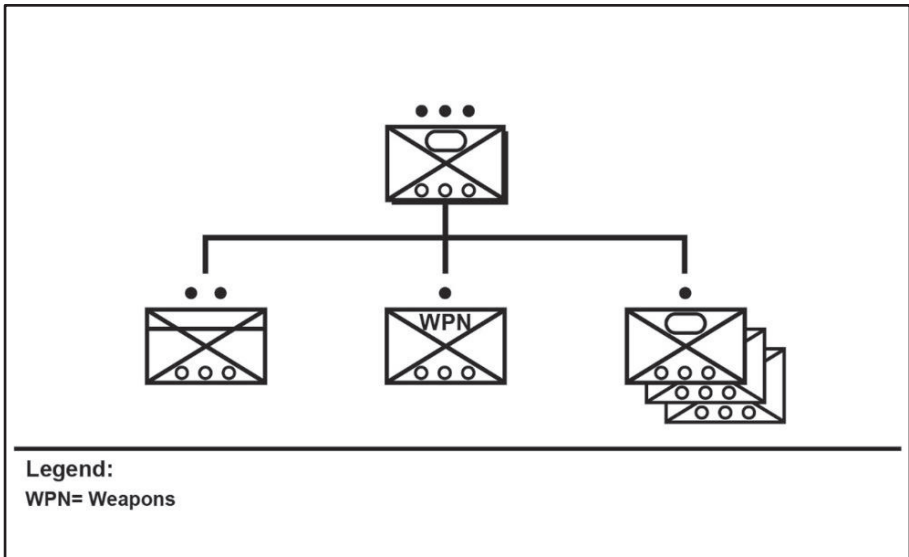


Figure C-4. Stryker platoon organization

SECTION II – INFANTRY COMPANY ORGANIZATIONS

MECHANIZED INFANTRY COMPANY

C-13. The mechanized Infantry company is organized, equipped, and trained to fight with organic assets or as a task-organized company team. The mechanized Infantry company includes a HQ and three Bradley Fighting Vehicle platoons. (Refer to ATP 3-90.1 for more information.) Figure 1-3 on page 1-10 illustrates the organization of a mechanized Infantry company.

INFANTRY RIFLE COMPANY

C-14. The Infantry rifle company is organized with three Infantry rifle platoons and a weapons squad can deploy rapidly and be sustained by a support structure (see figure 1-4 on page 1-11). The platoon's composition and training uniquely equip it to conduct missions against conventional and hybrid threats in all types of terrain and climate conditions. In addition to the Infantry rifle platoon's primary warfighting mission, it performs platoon level tasks in support of stability and defense support of civil authorities' tasks, semi-independently or as an integral part of a larger force. (Refer to ATP 3-21.10 for more information).

SBCT INFANTRY RIFLE COMPANY

C-15. The Stryker brigade combat team (SBCT) Infantry rifle company with three Infantry platoons each that can be task organized based upon METT-TC. Its effectiveness increases through the synergy of combined arms including infantry, engineers, and other support elements. The SBCT Infantry rifle company as a combined arms force can capitalize on the strengths the company's elements while minimizing their respective limitations. SBCT units can operate in most terrain and weather conditions. They might be the dominant arm in fast-breaking operations because of rapid strategic deployment, and mobility capabilities. In such cases, they can take and gain the initiative early, seize and hold ground, and mass fires to stop the enemy. (Refer to ATP 3-21.11 for more information.)

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Appendix D

Tank Platoon in Cavalry Squadron

With the addition of an Armor company to the ABCT Cavalry squadron modified table of organization and equipment, an Armor platoon leader/*platoon commander* must be prepared to employ a tank platoon in an organization that has a different mission than a standard combined arms battalion. Tank platoons must fully understand their task, purpose, and commander's intent to facilitate the mission of the Cavalry squadron. Tank platoons must be prepared to provide direct fire support to help Cavalry elements in destroying enemy forces or allow the Cavalry units to retrograde and rejoin in the defense.

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ORGANIZATION

D-1. Besides understanding the tank platoons capabilities and limitations, the platoon leader/*platoon commander* must appreciate the tactical assets and liabilities of the mounted and dismounted capabilities of the Cavalry squadron. The platoon leader/*platoon commander* must realize that dismounted Scout elements move much more slowly than armored vehicles, but that they can use terrain very effectively to gain a positional advantage over the enemy and that terrain has a direct impact on survivability for the Scout.

D-2. Cavalry squadrons conduct reconnaissance and security tasks in close contact with enemy organizations and civilian populations consistent with the fundamentals of reconnaissance and security. Squadrons help the BCT commander in identifying gaps or weaknesses in the plan and identify opportunities to exploit and improve the situational understanding. Reconnaissance and security tasks answer priority intelligence requirements. Reconnaissance and security tasks enable the commander to make decisions and direct forces to achieve mission success. Reconnaissance and security tasks enable successful offense, defense, and stability tasks (refer to ATP 3-20.96 for more information).

D-3. The ABCT Cavalry squadron is composed of a HQ and HQ Troop, three Cavalry troops, and one Armor company. Figure D-1 illustrates the organization of an ABCT Cavalry squadron.

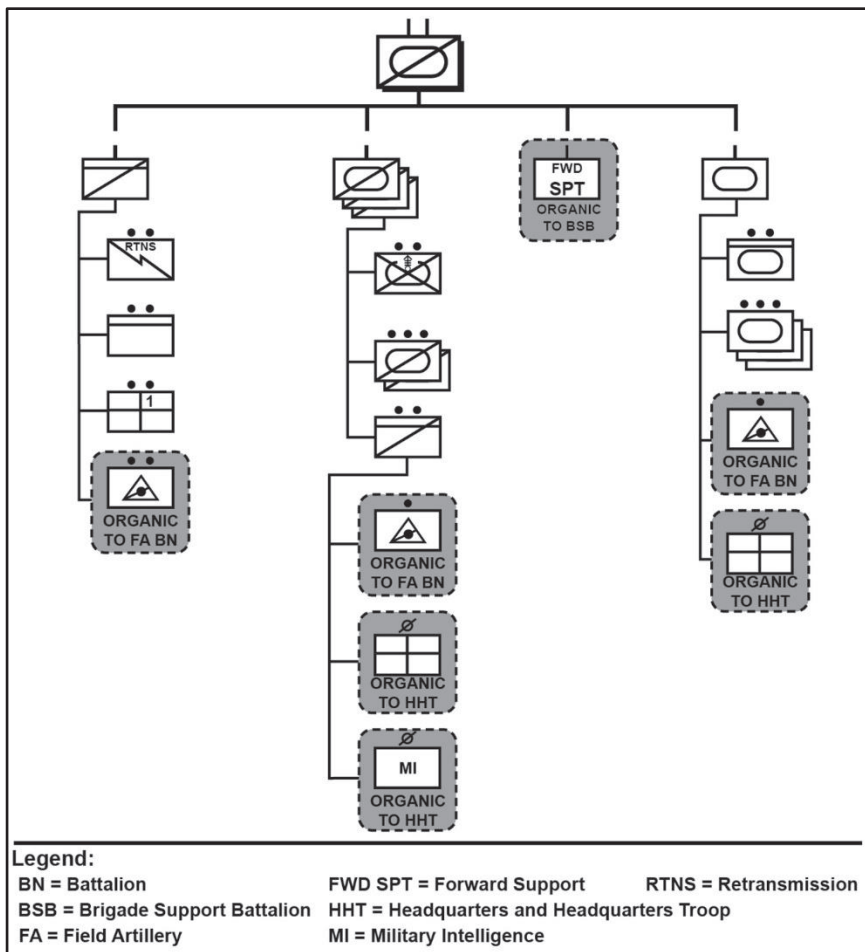


Figure D-1. ABCT Cavalry squadron organization

D-4. As the eyes and ears of the squadron commander, the Cavalry troop is the squadron commander's primary reconnaissance and security asset. Cavalry troops provide the information the commander needs to conduct better-informed planning, to direct operations, and to visualize the AO. The Cavalry troop skillfully conducts reconnaissance and security tasks to collect information about the threat's location, disposition, and composition. As part of the squadron, the Cavalry troop provides reaction time and maneuver space for the BCT commander. In turn, these operations allow the BCT commander to shape the AO proactively and to accept or initiate contact

at times and places of the commander's choosing. Cavalry troops conduct reconnaissance and security tasks throughout the squadron and BCT AO.

D-5. The ABCT Cavalry troop is organized, equipped, and trained to conduct reconnaissance and security tasks throughout the squadron and BCT AO. The ABCT Cavalry troop organization includes a HQ section, two Scout platoons, and a mortar section (refer to ATP 3-20.97 for more information). Figure D-2 illustrates the organization of an ABCT Cavalry troop.

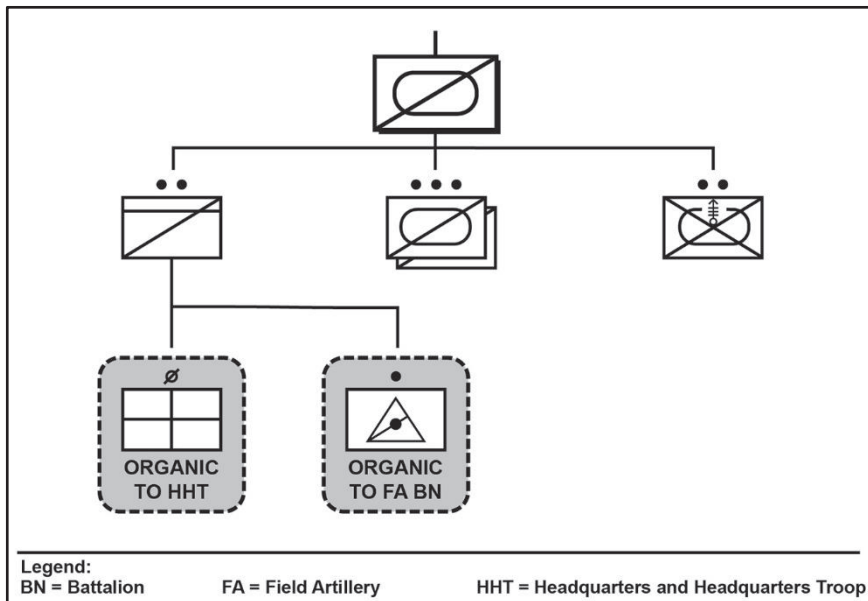


Figure D-2. ABCT Cavalry troop organization

D-6. The ABCT Cavalry troop capabilities include survivability in unified land operations and fighting for information. The Bradley Fighting Vehicle, armed with a 25-mm cannon, 7.62-mm coaxial machine gun, and tube launched, optically tracked, wire-guided missile system, provides firepower.

D-7. The ABCT Cavalry troop limitations include limited maneuverability in urban environments and other types of complex terrain. The troop's heavier vehicles create sustainment consideration for resupply, refueling, and maintenance despite the ABCT's enhanced sustainment capability.

D-8. Tank platoons are organic to the Armor company, but they can be task organized in many different ways at the company, platoon, or section level. The task organization used impacts what mission the tank platoon receives and what they can expect to happen. Three task organization possibilities are:

- Pure: No task organization. The Armor company is retained as a single maneuver element.
- Augmented: One tank platoon is task organized to a Cavalry troop. The Armor company (-) is retained as a maneuver element
- Balanced: Two Cavalry troops each receive one tank platoon. The Armor company (-) receives one scout platoon.

D-9. Tank platoons provide a mobile, protected direct fire capability that allows forward Cavalry units to be aggressive in the execution of their reconnaissance and security tasks and operate with greater audacity. Follow and support roles for tank platoons are common and as such, tank platoon leaders/platoon commanders must be prepared to conduct all tactical tasks associated for any tank platoon. In addition, tank platoons must be prepared to operate at the platoon and section level over wide areas in support of scout sections, scout platoons, or the Cavalry troop. Planning and rehearsing forward and rearward passage of lines is vital for this to happen (see chapter 7).

D-10. When attached to a Cavalry troop, tank platoon leaders/*platoon commanders* and platoon sergeants must understand Cavalry troop capabilities and the unit SOP. The tank platoon leadership should address tank platoon and section specific capabilities and requirements. Considerations include mobility, lethality, available personnel to perform dismounted tasks, operations in close proximity to dismounted scouts, local security, and unique resupply (Class III [Bulk], III [Package], and V), recovery, battle damage assessment, and repair requirements.

Glossary

The glossary lists acronyms and terms with Army or joint definitions. Where Army and joint definitions differ, (Army) precedes the definition. Terms for which ATP 3-20.15 is the proponent are marked with an asterisk (*). The proponent publication for other terms is listed in parentheses after the definition.

SECTION I – ACRONYMS AND ABBREVIATION

Acronym	Definition
1SG	first sergeant
AA	assembly area
ABCT	armored brigade combat team
ADP	Army doctrine publication
ADRP	Army doctrine reference publication
AO	area of operations
AR	Army regulation
ASCOPE	areas, structures, capabilities, organizations, people, and events
AT	antitank
ATP	Army techniques publication
BHL	battle handover line
BP	battle position
CBRN	chemical, biological, radiological, and nuclear
CLS	combat lifesaver
COA	course of action
DA	Department of the Army
DNA	deoxyribonucleic acid
DOD	Department of Defense
EA	engagement area
FA	field artillery

FDC	fire direction center
FIST	fire support team
FM	field manual
FMT	field maintenance team
FRAGORD	fragmentary order
GPS	Global Positioning System
GTA	graphic training aid
HQ	headquarters
JP	joint publication
KOCSA	<i>key terrain, observatoins and fields of fire, cover and concealment, obstacles, and avenues of approach (Marine Corps)</i>
LD	line of departure
LOA	limit of advance
LOGPAC	logistics package
MCRP	<i>Marine Corps reference publication</i>
MCT	<i>maintenance contact team (Marine Corps)</i>
MCTP	<i>Marine Corps tactical publication</i>
MCWP	<i>Marine Corps warfighting publication</i>
MEDEVAC	medical evacuation
METT-TC	mission, enemy, terrain and weather, troops and support available, time available, and civil considerations
MOPP	mission-oriented protective posture
NSN	national stock number
OAKOC	observation and fields of fire, avenues of approach, key terrain, obstacles, and cover and concealment
OP	observation post
OPORD	operation order
OPSEC	operations security
PCC	precombat check
PCI	precombat inspection
PK	probability of kill
PL	phase line
PMCS	preventive maintenance checks and services
RFL	restrictive fire line

ROE	rules of engagement
RP	release point
SBCT	Stryker brigade combat team
SOP	standard operating procedure
SP	start point
SPOTREP	spot report
S-2	battalion intelligence staff officer
TLP	troop leading procedures
TM	technical manual
TRP	target reference point
TTP	tactics, techniques, and procedures
UAS	unmanned aircraft systems
U.S.	United States
WARNORD	warning order
WCS	weapons control status
WP	white phosphorous
XO	executive officer

SECTION II – TERMS

administrative movement

A movement in which troops and vehicles are arranged to expedite their movement and conserve time and energy when no enemy ground interference is anticipated (FM 3-90-2).

area of influence

(DOD) A geographical area wherein a commander is directly capable of influencing operations by maneuver or fire support systems normally under the commander's command or control (JP 3-0).

area of interest

(DOD) That area of concern to the commander, including the area of influence, areas adjacent thereto, and extending into enemy territory. This area also includes areas occupied by enemy forces who could jeopardize the accomplishment of the mission. Also called AOI (JP 3-0).

area of operations

(DOD) An operational area defined by the joint force commander for land and maritime forces that should be large enough to accomplish their missions and protect their forces. Also called AO (JP 3-0).

area security

A security task conducted to protect friendly forces, installations, routes, and actions within a specific area (ADP 3-90).

assembly area

An area a unit occupies to prepare for an operation (FM 3-90-1).

attack

An offensive task that destroys or defeats enemy forces, seizes and secures terrain, or both (ADP 3-90).

avenue of approach

A path used by an attacking force leading to its objective or to key terrain. Avenues of approach exist in all domains (ADP 3-90).

breach

A synchronized combined arms activity under the control of the maneuver commander conducted to allow maneuver through an obstacle (ATP 3-90.4/MCWP3-17.8).

checkpoint

A predetermined point on the ground used to control movement, tactical maneuver, and orientation (ATP 3-50.20).

civil considerations

The influence of manmade infrastructure, civilian institutions, and attitudes and activities of the civilian leaders, populations, and organizations within an area of operations on the conduct of military operations (ADRP 5-0).

combat formation

An ordered arrangement of forces for a specific purpose and describes the general configuration of a unit on the ground (ADP 3-90).

combat outpost

A reinforced observation post capable of conducting limited combat operations (FM 3-90-2).

concealment

Protection from observation or surveillance (FM 3-96).

constraint

A restriction placed on the command by a higher command. A constraint dictates an action or inaction, thus restricting the freedom of action of a subordinate commander (FM 6-0).

cover

Protection from the effects of fire (FM 3-96).

A security task to protect the main body by fighting to gain time while also observing and reporting information and preventing enemy ground observation of and direct fire against the main body. Units performing the cover task can operate independently of the main body (ADP 3-90).

decisive terrain

Key terrain whose seizure and retention is mandatory for successful mission accomplishment (ADP 3-90).

engagement area

Where the commander intends to contain and destroy an enemy force with the massed effects of all available weapons and supporting systems (FM 3-90-1).

envelopment

A form of maneuver in which an attacking force seeks to avoid the principal enemy defenses by seizing objectives behind those defenses that allow the targeted enemy force to be destroyed in their current positions (FM 3-90-1).

essential task

A specified or implied task that must be executed to accomplish the mission (FM 6-0).

execution

Putting a plan into action by applying combat power to accomplish the mission (ADP 5-0).

exploitation

An offensive task that usually follows a successful attack and is designed to disorganize the enemy in depth (ADP 3-90).

flank attack

A form of offensive maneuver directed at the flank of an enemy (FM 3-90-1).

frontal attack

A form of maneuver in which an attacking force seeks to destroy a weaker enemy force or larger enemy force in place over a broad front (FM 3-90.1).

guard

A security task to protect the main body by fighting to gain time while also observing and reporting information and preventing enemy ground observation of and direct fire against the main body. Units performing a guard mission cannot operate independently because they rely upon fires and functional and multifunctional support assets of the main body (ADP 3-90).

implied task

A task that must be performed to accomplish a specified task or mission but is not stated in the higher headquarters' order (FM 6-0).

infiltration

A form of maneuver in which an attacking force conducts undetected movement through or into an area occupied by enemy forces to occupy a position of advantage behind those enemy positions while exposing only small elements to enemy defensive fires (FM 3-90-1).

key terrain

An identifiable characteristic whose seizure or retention affords a marked advantage to either combatant (ADP 3-90).

linkup

A meeting of friendly ground forces, which occurs in a variety of circumstances (ADP 3-90).

local security

A security task that consists of low-level security activities conducted near a unit to prevent surprise by the enemy (ADP 3-90).

movement to contact

An offensive task designed to develop the situation and to establish or regain contact (ADP 3-90).

penetration

A form of maneuver in which an attacking force seeks to rupture enemy defenses on a narrow front to disrupt the defensive system (FM 3-90.1).

planning

The art and science of understanding a situation, envisioning a desired future, and laying out effective ways of bringing that future about (ADP 5-0).

pursuit

An offensive task designed to catch or cut off a hostile force attempting to escape, with the aim of destroying it (ADP 3-90).

quartering party

A group of unit representatives dispatched to a probable new site of operations in advance of the main body to secure, reconnoiter, and organize an area before the main body's arrival and occupation (FM 3-90-2).

reconnaissance in force

A deliberate combat operation designed to discover or test the enemy's strength, dispositions, and reactions or to obtain other information (ADP 3-90).

retirement

A form of retrograde in which a force out of contact moves away from the enemy (ADP 3-90).

risk assessment

The identification and assessment of hazards (first two steps of the risk management process) (JP 3-07.2).

screen

A security task that primarily provides early warning to the protected force (ADP 3-90).

specified task

A task specifically assigned to a unit by its higher headquarters (FM 6-0).

strong point

A heavily fortified battle position tied to a natural or reinforcing obstacle to create an anchor for the defense or to deny the enemy decisive or key terrain (ADP 3-90).

tactical road march

A rapid movement used to relocate units within area of operations to prepare for combat operations (ADP 3-90).

tempo

The relative speed and rhythm of military operations over time with respect to the enemy (ADRP 3-0).

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By Order of the Secretary of the Army:

MARK A. MILLEY
General, United States Army
Chief of Staff

Official:

A handwritten signature in black ink that reads "Kathleen S. Miller". The signature is written in a cursive style with a large initial 'K'.

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